EVIDENTIARY HEARING

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:	)	
	)	
Application for Certification	)	Docket No.
of the San Joaquin Valley Energy	)	01-AFC-22
Center Project in Fresno County	)	
(SJVEC)	)	
	)	

CALIFORNIA ENERGY COMMISSION

HEARING ROOM B

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

THURSDAY, FEBRUARY 20, 2003

1:11 p.m.

Reported by:
Valorie Phillips
Contract No. 170-01-001

COMMITTEE MEMBERS PRESENT

John L. Geesman, Associate Member

HEARING OFFICER, ADVISORS PRESENT

Major Williams, Jr., Hearing Officer

STAFF AND CONSULTANTS PRESENT

Paul Kramer, Legal Counsel

Mathew Trask, Siting Project Manager

Steve Baker

Jim Buntin, Vice President
Bill C. Thiessen, Senior Consultant
Brown-Buntin Associates, Inc.

PUBLIC ADVISER

Grace Bos

APPLICANT

Jeffrey D. Harris, Attorney
Greggory Wheatland, Attorney
Ellison, Schneider and Harris, LLP

Michael A. Argentine, Manager, Project Development
Steven A. DeYoung, Environmental Project Manager
Jim McLucas, Regional Engineer
Calpine Corporation

Mark Bastasch, Project Engineer
CH2MHILL

Rob Greene, Manager, Noise and Vibration
URS Corporation

INTERVENORS

Keith Freitas

I N D E X

P R O C E E D I N G S

1:11 p.m.

HEARING OFFICER WILLIAMS: This is a continuation of the Committee evidentiary hearing in the San Joaquin Valley Energy Center; CEC docket number 01-AFC-22. Commissioner Geesman, our Associate Member, is present. I'm the Hearing Officer, Major Williams, Jr. And the Public Adviser's Office is represented by Grace Bos.

Would the parties introduce themselves, starting with the applicant, please.

MR. WHEATLAND: Good afternoon, I'm Gregg Wheatland, the attorney for the applicant.

MR. GREENE: Good afternoon, I'm Rob Greene, expert in noise and acoustics for the applicant.

MR. McLUCAS: I'm Jim McLucas with Calpine; I'm the Regional Engineer.

MR. ARGENTINE: I'm Mike Argentine with the applicant, Project Manager.

MR. BASTASCH: I'm Mark Bastasch with CH2MHILL, consultant on the project.

MR. DeYOUNG: And I'm Steve DeYoung, consultant, Environmental Manager with Calpine.

HEARING OFFICER WILLIAMS: Yes, I

appreciate you all speaking directly into the mike, as well. The acoustics in this room are not great, so we really have to be cognizant of speaking directly into the mike so that our court reporter won't jump up in great distress. So I would appreciate it is we could remember to do that.

Staff.

MR. KRAMER: I'm Paul Kramer, the Staff Counsel in this case. With me is Matt Trask, the Project Manager, and our three noise experts, Steve Baker, Jim Buntin and Bill Thiessen.

HEARING OFFICER WILLIAMS: Mr. Freitas.

MR. FREITAS: Yes, I'm Keith Freitas, intervenor.

HEARING OFFICER WILLIAMS: Are there any members of the public present who would like to introduce themselves. I see none.

As to the housekeeping matters, the Committee hearing will resume tomorrow at 1:00 p.m., in this room, where we expect to finish the topic of visual resources.

Do we have an updated exhibit list by any chance?

UNIDENTIFIED SPEAKER: Right here.

HEARING OFFICER WILLIAMS: Okay. Thank you very much. Again, I would ask the parties to review the exhibit list to make sure that we've listed all the exhibits. That's a continuing concern that we need to be cognizant of.

I would also ask the parties to think about the briefing schedule at the conclusion of the evidentiary hearings. The Committee is contemplating opening and reply briefs. We would certainly entertain the parties' suggestions as to dates and what-have-you. So if you could think about that and we'll take up that matter tomorrow at the conclusion of the hearings, the matter of our briefing schedule in this case.

As you know, evidentiary hearings are formal in nature, similar to court proceedings. The purpose of the hearing is to receive evidence including testimony, and to establish the factual record necessary to reach a decision in this case.

Applicant has the burden of presenting substantial evidence to support the findings and conclusions required for certification of the proposed facility.

The order of testimony today will be applicant, staff, intervenor Freitas. Do we have

anyone on the phone? There doesn't appear to be anyone on our conference line.

Our witnesses will testify under oath or affirmation. During the hearing the party sponsoring the witness shall establish the witness' qualifications and ask the witness to summarize the prepared testimony.

Relevant exhibits should be offered into evidence at that time. At the conclusion of a witness' direct testimony the sponsoring party should move in all relevant exhibits to be received into evidence.

The Committee will next provide the parties an opportunity for cross-examination followed by redirect and recross-examination, as appropriate. Multiple witnesses may testify as a panel. The Committee may also question the witnesses.

Upon conclusion of each topic area we will invite the members of the public to offer unsworn public comment, if there are any. Public comment is not testimony and a Committee finding cannot be based solely on such comments. However, public comment may be used to explain evidence in the record.

We closed the record yesterday on the topic of air quality. And we're set today to pick up with applicant's presentation first on the topic of noise.

So, with that, I'll ask the applicant to proceed.

MR. FREITAS: Mr. Williams?

HEARING OFFICER WILLIAMS: Yes.

MR. FREITAS: I'm sorry if this is procedurally incorrect, maybe I need some guidance from you. But after -- we took in a lot of information yesterday.

HEARING OFFICER WILLIAMS: Right.

MR. FREITAS: Okay, and we didn't have a lot of time to digest what we took in.

HEARING OFFICER WILLIAMS: Right.

MR. FREITAS: Is it appropriate for me to reserve any kind of rights to go back for clarification from either the witnesses or the parties on some of the information that was presented yesterday?

HEARING OFFICER WILLIAMS: Well, what happens is you'll get a copy of the transcript to review the proceedings. And after you get a copy of the transcript you will have an opportunity to

submit a written brief to the Committee. That's the procedure.

MR. FREITAS: Okay. To seek clarification or --

HEARING OFFICER WILLIAMS: Right, --

MR. FREITAS: -- deal with remaining issues, because there was new issues that were brought up yesterday.

HEARING OFFICER WILLIAMS: Right.

MR. FREITAS: We didn't have really a chance to respond to those new issues.

HEARING OFFICER WILLIAMS: Well, that's sort of what I meant when I said that I want the parties to think about the briefing schedule. And if you have issues that you want some clarification on we can take that up tomorrow in terms of looking at the briefing schedule.

And, of course, we know that the primary area of briefing will be air quality.

MR. FREITAS: So I'm not allowed to go back in and reopen, or go back in and recross or anything?

ASSOCIATE MEMBER GEESMAN: Those witnesses are gone.

MR. FREITAS: Those witnesses are gone,

you can't do anything --

ASSOCIATE MEMBER GEESMAN: Right, that's correct.

MR. FREITAS: -- with the witnesses, even if they present evidence?

ASSOCIATE MEMBER GEESMAN: They presented evidence yesterday.

MR. FREITAS: Yeah, but there was evidence that was presented that I didn't have time to digest, Mr. Geesman. I didn't even have time to think about the implications of what the statements were made.

ASSOCIATE MEMBER GEESMAN: Well, you'll have to address that in your brief then.

MR. FREITAS: Okay.

HEARING OFFICER WILLIAMS: Yeah, so if you would like to seek some clarification --

MR. FREITAS: Okay.

HEARING OFFICER WILLIAMS: -- in terms of the issues that you want to address in the briefs, it might be a good idea to talk about it so that we can focus the briefs. But you're not limited in terms of what you want to brief, or what issues you want to raise in your brief. You're not limited. You can raise anything that

you wish to raise, because we'll probably end up filing briefs, initial briefs, the parties will file by a certain date. And then after the initial briefs are filed, then you'll have an opportunity to address the other parties' contentions in the closing brief, as well.

MR. FREITAS: Are there responsive briefs to the original?

HEARING OFFICER WILLIAMS: Yeah, the closing brief, it's a responsive brief. So, you know, to the extent that we wish to focus the briefs, we can talk about that tomorrow. But certainly air quality will be an issue that will be addressed, I'm sure, as well as perhaps noise and visual.

MR. FREITAS: Thank you.

ASSOCIATE MEMBER GEESMAN: Let me also add that after we receive the briefs the Committee will issue a proposed decision, which you'll have an opportunity to comment upon. And then the proposed decision will go to the full Commission and you'll have an opportunity there to comment, as well.

MR. FREITAS: Thank you.

HEARING OFFICER WILLIAMS: Okay.

MR. FREITAS: Thank you for explaining that.

HEARING OFFICER WILLIAMS: Sure. So with that, applicant.

MR. WHEATLAND: Thank you. The applicant's testimony on noise today consists of ten exhibits. And those ten exhibits have been identified on the tentative exhibit list as exhibits 4B and exhibits 4B-1 through 4B-9. I believe all the parties in this room today have been provided a copy of the tentative exhibit list.

Do you wish me to read the titles of those exhibits into the record, or is it sufficient for the purposes of the transcript to state that those will be our exhibits for this portion of our testimony?

HEARING OFFICER WILLIAMS: No, that's sufficient.

MR. WHEATLAND: Okay. Then in the interest of a complete record, we have a panel of five witnesses, which may be a record. And what I'd like to do first is ask that the panel be sworn.

So if you could rise, please, the

reporter will swear you in.

Whereupon,

STEVE DeYOUNG, MARK BASTASCH,

MICHAEL ARGENTINE, JIM McLUCAS and ROB GREENE

were called as witnesses herein, and after first having been duly sworn, were examined and testified as follows:

DIRECT EXAMINATION

BY MR. WHEATLAND:

Q Now, beginning on the end with Mr. DeYoung, I'd like to ask each witness to please state your name, your qualifications and the matters to which you'll be testifying today.

MR. DeYOUNG: My name is Steve DeYoung; 22 years experience in environmental management. I'm a consultant Environment Project Manager for Calpine. Coordinated the preparation of the testimony and will be acting as moderator today.

MR. BASTASCH: My name is Mark Bastasch. I'm with CH2MHILL. I'm an acoustical consultant, registered professional engineer. And prepared portions of the AFC.

MR. ARGENTINE: My name is Michael Argentine. I'm Project Manager for the applicant. I have more than 20 years experience in the

siting, construction, operation and maintenance of thermal power plants. And I'll be testifying regarding contacts with the homeowners around the project site.

MR. McLUCAS: My name's Jim McLucas; I'm a mechanical engineer with 21 years of experience. I'm Calpine's Regional Engineering Manager for the Western Region. And I'll be testifying on aspects of the plant design and noise attenuation measures incorporated therein.

MR. GREENE: My name is Rob Greene, and I'm a consultant to the applicant. I work for URS Corporation. I have 28 years experience in acoustics and community noise, environmental noise control and assessment. And I will be essentially responsible for discussion of all other noise issues that have not been enumerated before.

MR. WHEATLAND: Now, I'd like to ask each of the witnesses, beginning again with Mr. DeYoung, was this testimony prepared by you or under your direction?

MR. DeYOUNG: Yes.

MR. BASTASCH: Yes.

MR. ARGENTINE: Yes.

MR. McLUCAS: Yes.

MR. GREENE: Yes, it was.

MR. WHEATLAND: And I'd like to ask each of the witnesses, is the testimony to which you are testifying today true and correct to the best of your knowledge?

MR. DeYOUNG: Yes, it is.

MR. ARGENTINE: Yes.

MR. BASTASCH: Yes.

MR. McLUCAS: Yes.

MR. GREENE: Yes.

MR. WHEATLAND: And, Mr. DeYoung, are there any changes to the applicant's written testimony?

MR. DeYOUNG: No.

MR. ARGENTINE: No.

MR. WHEATLAND: All right.

MR. BASTASCH: No.

MR. McLUCAS: No.

MR. GREENE: No.

MR. WHEATLAND: All right. I think we've covered all of the background then, and I'd like to turn to Mr. Greene and ask you if you would, please, present a summary of the applicant's testimony.

MR. GREENE: Thank you, yes, I would.

I'd like to summarize the testimony with respect to the noise issues. The project, the San Joaquin Valley Energy Center, as proposed by the applicant, will completely satisfy laws, ordinances, regulations and standards that are applicable to the project.

In addition to that, the project, as proposed by the applicant, will not create a significant adverse noise impact on the surrounding areas.

Now there has been a substantial amount of evaluation and analysis to go into make the basis for that statement or those two statements. I'd like to briefly outline what the plant designers have done and some of the analysis as to how we came to the conclusions regarding LORS and CEQA.

Give me a little opportunity to describe to you what we've done. The project team conducted a very comprehensive analysis of onsite noise control for the project and abatement methods that would avoid significant adverse noise effects.

The project team also evaluated the LORS so they would have a target. And we'll talk a

little about that target to avoid any inconsistencies with the local agencies' planning efforts, and inconsistencies with their noise element, et cetera.

The project incorporates an approach that's balanced in that it looks at noise control on the site, actual mechanical controls and physical controls at the plant, itself. And I will ask one of our other panel members to describe those in more detail.

But it also has two other components that we'll address and those have to do with some offsite noise reduction measures which, while not necessary from the point of view of complying with LORS or from the point of view of being mandated by CEQA, because there are no significant adverse effects, the applicant still proposes to incorporate those into an overall balanced approach to the noise control at the plant. So we will talk a little about those, as well.

I think it would be appropriate to discuss and highlight the source noise control effort that's been put into the plant. And for that purposes I would introduce Mr. Jim McLucas who has had that responsibility on the project.

MR. McLUCAS: I'd like to just quickly run through some of the measures incorporated into the plant design to meet our objective on this particular project.

The first is the fuel gas compressors. Because of the gas pressure we have to provide compressors to get the pressure that the combustion turbines require. Those are generally a fairly noisy piece of equipment. And we're proposing to locate those inside a building, which is a fairly expensive structure, valued at 1.3 million.

The combustion turbines and generators will be enclosed in noise attenuating enclosures, along with the associated equipment that goes along with the mechanical and electrical packages. And in addition, inlet air silencers on the front end.

The steam turbine generator on this project, because of the significant amount of peaking that we've got, is very large. It's got a high pressure section, an intermediate pressure section and two low pressure sections. And will occupy a space about twice the size of this room. And that will be provided with a noise attenuating

structure that will be located on top of the steam turbine pedestal.

Because this project is a zero liquid discharge plant, there are significant mechanical pieces of equipment to make that happen, including the brine concentrators. And they have very large vapor compressors that are a noise generator, along with recirculation pumps. And typically that equipment would be located outside to provide better access for maintenance. And in this case we're locating it inside the water treatment building to reduce the noise.

The cooling tower is a fairly large structure that produces a significant amount of the overall plant noise. That's being located on the northeast side of the plant, basically centralizing that between the various noise receptors.

The steam system, vent, stacks will be provided with silencers. There's actually a photograph of those in our testimony.

High noise piping such as that located downstream of pressure-reducing valves where there's a significant pressure drop, such as fuel pressure regulating stations, the HRSG duct burner

skid, et cetera, will be provided with acoustical lagging to reduce that noise.

The plant instrument air compressor system, which is typically located outdoors, will be located inside the water treatment building to reduce that noise.

And then other major plant components will be controlled through noise specifications, obtaining 85 dba at three feet where that's achievable by vendor standard. And if not that, then 90 dba at three feet.

MR. GREENE: Thank you, Jim. The primary effort at noise control as Jim has just gone over, is focused at the plant source. And by looking at the noise levels and then doing the analysis under the LORS and under CEQA, that was our first effort. Is to find out how we did.

With respect to the applicable LORS, the only applicable LORS from the City of San Joaquin, and the City has determined that the project complies with all applicable City laws, ordinances, regulations and standards.

Additional to that, the County of Fresno has indicated that the LORS from that jurisdiction do not apply to this plant. Thus, the plant is in

full compliance with LORS as currently designed.

The question of California Environmental Quality Act is a little more complicated. The project, itself, is complicated with respect to noise. There are a lot of sources. And so we cannot do, and it is not appropriate to do a very simplistic checklist-type approach to whether this project would or wouldn't comply with the CEQA provisions.

The requirement is to do a more detailed analysis. Questions are posed as to whether the project would subject someone to severe noise levels. No, it will not, and I believe the staff and the applicant are agreed that the OSHA provisions are applied to the plant. There will not be exposure of unprotected persons to high noise levels. That will be in compliance.

There will not be any generation of vibration levels, either during the construction phase or operations phase that would migrate offsite. So there will not be vibration impacts generated by the project.

Another question asked in the checklist under CEQA is compliance with LORS, which we've already addressed.

And finally, based on our analysis there will not be a substantial change, either temporary or permanent, as a result of operation or construction of the project.

In looking at how to analyze the plant potential impact, which it certainly has, as any large industrial facility with machinery and such, there is a potential. So we look at that very carefully. We need to look at the absolute noise levels that are created, as well as increases or changes in noise level. Both of those must be looked at.

And we need to look at the affected land use around the plant. We also need to look at the population around the plant, you know, what type of population, sensitive or otherwise, would be in the environs of the plant.

And then look at the most effective means to avoid impact, and source noise control, as described by Mr. McLucas, will do an appropriate and adequate job of preventing significant adverse noise effects.

The existing ambient environment, as would be expected in most any place where we have heavy trucks on road and a railroad line and

industrial facilities and a nearby city, the existing ambient environment consists of periods of noisy acoustic environment and periods of quiet acoustic environment. They're intermixed and interspersed throughout the day and night.

The affected land use is zoned primarily industrial and agricultural. There's a very sparse population of residential use that's ancillary to the agricultural production and agricultural land. It is not zoned residential; it does not contain housing developments of any sort in terms of multifamily or dispersed rural residential or anything of that nature.

The residents in the area are aware that there would be some changes in the noise environment due to construction and operation of the plant. And they're aware that it would be audible. We'll talk a little more about that in a bit here.

We're looking at the increase in decibel levels after doing a very thorough scientifically based analysis comparing the projected noise levels from the plant against the technical literature and research that's been done by others as to the effects of noise. And I'll detail a few

of those points shortly here.

We're looking at the requirement under CEQA that if we have an increase in noise level its potential to cause an adverse effect must be looked at. But the actual increase must result in the substantial adverse effect before we have a significant impact under CEQA. With no adverse effect, there's no significant impact.

We had looked at the potential for the plant to interfere with routine daytime and nighttime activities that are conducted in the surrounding areas and concluded that they'll be able to continue without any adverse effects.

The residential and agricultural and industrial land uses that exist in the area will be able to continue to co-exist in the area. And there were some, for the more sensitive issues there, there's some analysis we did in more detail to arrive at the conclusions we made.

And I'd just like to touch upon some of those. As to how I came to the conclusion, as an expert witness in this field, that the plant will not result in a substantial or significant adverse noise effect.

Several areas are of concern. The first

obviously is health. We always are concerned of any type of adverse impact, how it will affect health. And the best overall determiner of that is to look at a document that was prepared by the United States Environmental Protection Agency, which looked into that question of noise effects on health.

And this project will not generate noise levels at the nearest sensitive receptors that would exceed a 55 decibel day/night level, day/night average level, the LDN. And that happens to be the descriptor that the USEPA used to determine that the 55 dba LDN was, quote, "the level of environmental noise requisite to protect the public health with an adequate margin of safety" close quote. So in that respect this plant will not have an adverse effect on health.

Another major area of concern, and certainly on the part of the residents in the area, is, you know, will the plant operation interfere with their activities, daily activities.

And there are three areas most commonly discussed in the scientific literature. And those are the adverse effects of noise on sleep, so sleep disturbance we should look at.

The adverse effects on intellectual or leisure activity. And speech or communication interference. And we looked in detail at those areas.

The project will not cause a sleep disturbance based on my review of the literature that's available, and based on the fact that people generally will sleep indoors. Some may choose to sleep with windows open; some may have windows closed. But in either case, the sound levels from this plant indoors will be low enough to not adversely affect sleep. There will not be sleep disturbance, with the typical 13 to 15 decibels of reduction provided by a house with the windows partially open.

Another question is whether or not the noise level would be adverse to outdoor/indoor intellectual activity. No, it will not. The levels are low enough outside of a structure such that with respect to let's say speech activity, with the normal tone of voice, conversing normal distances, 99.5 percent of intelligibility would be retained at the noise level that we're discussing. And that graphic showing that has been included in our testimony.

It will not adversely affect passive activities, reading a book or painting a picture. And it will definitely not have an adverse effect on activities such as shooting a basketball or chasing your grandkids around the backyard and so forth. There would not be an adverse effect from plant noise levels on that type of activity outside, without any other noise reduction efforts. And certainly inside with the additional 13 to 15 decibels of reduction, or 20 or more with windows closed, there will be no adverse effect whatsoever.

We've addressed the question of interference with speech. As I said, outside 99.5 percent speech intelligibility is retained. Inside, 100 percent speech intelligibility. And that also includes activities like talking on the telephone, watching television, those type of things where you have speech levels and communication.

So that when we look at the activities, the type of things people do in and around their houses, the noise caused by, the noise level generated by the plant would not cause significant adverse effects, and thus will not cause

significant adverse impacts.

Now, that being said, the applicant, Calpine, is proposing an additional offsite noise reduction effort to enhance the acoustics, the environmental acoustics of the residents in the area. And that, again, has been submitted into evidence.

There are several features of that. One would be very small localized noise barriers that affect the pathway. And we talked earlier about the source control. The next effect is in the path; how does the sound get from the source to the receptor. And there could be some very effective limited barriers that's necessary. They might be around a patio area or barbecue, play yard, something in that nature.

As well as a sound insulation program for those homes that are nearest to the plant. And that would include upgrades of windows, doors, weather-stripping to enhance the performance of the structure acoustically, if it's necessary to do so. And that would also include air conditioning, if it didn't happen to have air conditioning and such.

And those have been proposed to improve

the dwelling from an acoustic standpoint. And again, we're talking about a relatively constant, low level noise. No frequency peaks or pure tones in it. Relatively, actually soothing noise. It's the kind of, oh, you could call it white noise or pink noise. It is the type of noise people go to the Sharper Image to buy a machine to make actually when they're traveling around the country, or when they want to put it in the bedroom. The little whooshing sound effects machines. Be very similar to that, and at very low levels.

ASSOCIATE MEMBER GEESMAN: How would you compare it to this ventilation system?

MR. KRAMER: At what point? I mean relative to the source.

MR. GREENE: Well, yeah, that would be the question. To answer your question exactly, I would take the sound level meter out and actually measure it and see what this ventilation system is providing.

The noise level will decrease depending on farther away or closer. The applicant used the City of San Joaquin objective in their noise element of 50 decibel as their design goal. And

are able to meet that goal with the machinery controls described earlier. And would, you know, meet it -- they'll accept like a 49, it'll get below that 50 number.

That level there is probably close, is above that. I mean it's not unobtrusive. And that is a problem when noise sources become obtrusive. It's my opinion that the noise level from the plant will not be always in the audible range for all the people around there.

It will be audible. There is no, you know, inaudible device until you get far enough away from it that you don't hear it. But, just mere audibility is not sufficient to cause a severe or an adverse impact. So there is a difference between interfering noise levels and just sound that we can hear. And we really did look at that quite carefully.

MR. WHEATLAND: How would this noise, in your opinion, compare to the noise of the plant at the closest receptor?

MR. GREENE: I think the character of the noise is probably pretty similar. It's a broadband, what we call a broadband, meaning it contains a lot of frequencies, no one particular

squeal or screech, you know, we're not hearing a whine or a tone or anything from it. It's very broad-based. Kind of like I say, a little soothing. It's just sort of there. Hopefully not too soothing or everybody will be nodding off, going to sleep this afternoon. And so we don't want to do that.

But level-wise I'd have to actually get a measurement. It's a little hard to judge how a noise from outside will sound inside a room like this. Because this room has got a lot of hard surfaces, and so the noise that's coming out of that ventilator as a source is being reinforced and brought up a level from bouncing off the walls and bouncing off the tables.

But it would be -- I would have to measure it to say how loud it was. And again, the question of not only how close you are, but what descriptor would we use. And that's probably a good point to bring up, that there's some areas that I'll go into in a minute, in addition to our compliance with LORS and compliance with CEQA, we do have some concerns with the staff analysis.

One of those being the selection or how they arrived at the selection of the descriptor.

Because this noise or any other noise, the plant noise, could be described in several ways. And in using decibels, which are crazy little critters that it's real tough to get a handle on. They don't behave well mathematically. You have to start thinking in terms of power structures and powers of ten.

But the noise can be described variously with different decibel levels using different descriptors. What's important to remember there is that the noise really isn't changing. The noise is the noise.

I can give you a number and say, well, it will be a sound pressure level of let's just say 50, because that is a good, you know, number. And then if I measured it over a little bit of time and averaged it, I would have an LEQ, which is an equivalent level. That just means that there's a little bit of variation in a sound, we knock off the peaks and fill in the valleys a little bit and get an equivalent of a continuous sound. And that level will be a different, more than likely a slightly different decibel number.

I could look at the peak noise level, the true peak. And there are probably little

pulsations every time the fan blade goes around that is driving that air stream, there's a little pulse. It's very short term, and we're not hearing it, which is good. But it's there in the signal. And a meter would read that and give me a different decibel number. And so instead of 50, I might have a 53 or some higher number, because that little peak, very short-term peak that my ear doesn't hear, but the sound meter relates, will be a different number. Percentiles or statistical numbers, the L50, L10, L90s, again will give you a different number for the very same noise.

And that's something to consider that it's not the noise that's changing, it's the way we're looking at it, the way we're describing it, with a different descriptor. And that does, in fact, cause us some concern with the methodology used by the staff to assess some of the increases, for example, in noise level. That particular descriptors are used, and that does have an effect.

What has, you know, more of an effect is not looking at the ambient noise level as CEQA requires you to look at, but looking at background, which is a part of the ambient. And

it's sometimes represented by a descriptor that's called the 90th centile, L90. You know, it's that level exceeded 90 percent of the time. So it's looking at the transition between the really quietest 10 percent and the other 90 percent of noise levels.

And that point is going to be at a different place in the decibel scale for the same noise.

In fact, we have already touched on that in the staff assessment, in the final analysis. There is some confusion between using ambient noise, background noise and some other background ambient noise. CEQA's pretty clear about ambient. Just defined as all the noise, all encompassing.

The use of the descriptor to describe background can mischaracterize the existing level and also skew the effect or by how much noise might increase. We already talked about the effect that there may be some changes in noise level and the plant will be audible. But, it's asserted in the staff assessments that the background noise level will be noticed, and because of that it may cause a significant impact because the facility, the plant now would be the

new background noise.

The staff didn't offer any scientific factual data to support that theory, that changes in this background level would cause adverse effects and result in significant noise impact. In my 28 years experience in looking at a lot of this, and also an extensive literature search that we completed for this project, we found that the scientific data really points to what's called the overall acoustic energy of an intruding noise as the most important factor for assessing adverse effects, including annoyance.

MR. FREITAS: I'm sorry, could you repeat that word? Protruding? What word did you just say?

MR. GREENE: Intruding, intruding noise.

MR. FREITAS: Oh, intruding. I'm sorry.

MR. GREENE: Right, if there's a new noise source.

MR. FREITAS: I'm having a hard time hearing.

MR. GREENE: Sorry.

MR. FREITAS: It's the noise level.

MR. GREENE: Yes. What the researchers have found consistently is that the low level

background noise really doesn't matter in the assessment of the annoyance. What matters is the energy contained in the offending noise level or the intruding noise level.

And that's quoted in my testimony, a lot of research by James Fields at NASA Research over the years. And he looked at very many studies, some 55,000 responses were evaluated by Fields. And came to that particular conclusion, with which I agree. I think it's very germane to our discussion.

People respond to energy in an intruding noise, not necessarily changes just in the background level.

The area that is again of concern to us with respect to this change in background level, that some arbitrary change, according to the staff's report, would generate complaints from the residents.

I'm certain that the Commission does not want complaints from the residents. I know that Calpine does not want complaints from the residents. They would like to be good neighbors. And so that is important to them.

and it's my belief that the argument

that background noise level increases, you know, will automatically result in complaints is defective, if you don't also consider the level of the sound, the absolute level of the sound.

If you change the sound level from 10 decibels to 20, or from 10 to 30, you know, that's a very large change. But in this room, in this environment, you wouldn't hear a 30 decibel sound at all. So that change would be totally unperceptable to you. So I think you really do need to look at both areas.

Also the sound level from the plant, according to the staff's own table, the FSA table A-2, which characterizes different noise levels, and a 50 decibel sound is considered quiet. It's my belief that when the sound is considered quiet that people are not likely to complain in that case.

And we have some evidence in the work to that effect in our attachment A to our prefiled testimony; there are various limits that have been applied to power plants by the Commission in different places. And so -- in California.

And what I found interesting is that I believe my testimony, based on scientific evidence

and fact, is valid. And I would hopefully be persuasive to your point of view that that makes sense. The staff may very likely -- they have, you know, indicated they have a different position.

But what I believe would be as certainly even stronger than speculation or opinion based on some fact is the real operating experience. And in our attachment we notice that a noise level of, an L90 noise level of 47 decibels was applied to a particular plant. And that's about the same as a 48, 49 LEQ. Again, same noise, different kind of descriptor. But within a couple db of each other.

And it turns out that plant was approved by the Commission as one of the conditions of certification in addition to the noise level, was to post a sign out front that said, you know, if you have a noise complaint or any other kind of environmental complaint, here's the phone number. Call us up and tell us about it.

And as it turns out that this plant that was conditioned at 47 L90, in its year of operation with the sign out front, experienced zero noise complaints.

HEARING OFFICER WILLIAMS: Which project

are you referring to?

MR. GREENE: That was the Los Medanos plant, formerly known as Pittsburg District Energy Facility.

And I always give a little more credence to actual, you know, what's been the experience, what has happened here. And that was the experience at that location.

So, another area that, you know, based on my reviews of the literature and also discussion with homeowners and residents in the area, and I have been to the site and have conducted some investigations of the site area, and based on the complaint experience at other operating plants, I firmly believe this project will not generate noise complaints. It would not happen.

So, in summary of our effort, I would say that the -- and before, I'll get to it in the summary here of the other items I mentioned to you, the offsite work. But, a comprehensive, scientifically based analysis of the potential for adverse noise impact was conducted.

There was a rigorous evaluation with respect to compliance with LORS and compliance

with the California Environmental Quality Act. Based on that analysis, a very responsive and balanced noise control and abatement program was developed to avoid significant noise impacts and to insure compliance with LORS.

And as part of that overall program, although even the source controls will do it, but Calpine undertook a very extensive effort to involve the property owners and citizens in the community. And have offered offsite noise insulation, as indicated, in the residences. That's been very favorably received by the nearby community, who are satisfied with the approach that source control, some path modifications where it makes sense in a small area, and some upgrading of the residences is a real good approach to the overall program.

And the little benefit of the acoustical upgrades is that existing noise from agricultural activities or trains or trucks, whatever it might be, and future noise that's not related to the plant would also be reduced. So there'd be an extra benefit there, that nonplant noise would be reduced, as well.

In conclusion, based on my analysis, all

the evaluations, very thorough scientific review of the existing literature and discussions, it's my belief that the San Joaquin Valley Energy Center, as presently designed and proposed by the applicant, will not result in adverse effects on the environment; will fully satisfy CEQA, including the LORS compliance component, without requiring additional noise mitigation. And the operation of the plant will not result in noise complaints by the surrounding community.

That would conclude my prepared remarks. And I'm certainly available for clarifications or questions that might come up.

MR. WHEATLAND: Thank you. At this time I'd like to move that exhibit 4B and exhibits 4B-1 through 4B-9 be received into evidence.

MR. KRAMER: No objection.

HEARING OFFICER WILLIAMS: Mr. Freitas?

MR. FREITAS: No objections.

HEARING OFFICER WILLIAMS: Those will be admitted.

MR. WHEATLAND: Thank you. Our witnesses are available for cross-examination.

(Pause.)

//

CROSS-EXAMINATION

BY MR. KRAMER:

Q First I'll start with Mr. McLucas. You described the sound reducing features that will be applied to the power plant, and I wanted to ask you which of those features, if any, go beyond what you would normally expect to see in a power plant of this type?

MR. McLUCAS: I would say they all go beyond what is necessary for a power plant of this type. The one that's probably the most common, though, is going to be the combustion turbines noise enclosures. And I can't think of a project, at least a Calpine project, that does not have combustion turbine noise enclosures.

MR. KRAMER: Do other Calpine projects have some of the other features you described, as well?

MR. McLUCAS: Yes, they do.

MR. KRAMER: So, --

MR. McLUCAS: So I'm not representing that all of these are unique to this project.

MR. KRAMER: Okay, thank you.

Mr. Greene.

MR. GREENE: Yes.

MR. KRAMER: You may have to help me, see if I wrote down what you said --

MR. GREENE: Sure.

MR. KRAMER: -- correctly, but you were describing CEQA's requirements, and the quote I wrote down was in order for some noise levels to create an issue under CEQA they, quote, "must result in a substantial adverse effect." Is that fair to say that that's what you said?

MR. GREENE: Yes, it is, that's correct.

MR. KRAMER: Okay. Can you define what a substantial adverse effect is in your mind?

MR. GREENE: Yes, I believe I covered that in the various detailed areas I talked about with respect to health, with respect to sleep disturbance, with respect to leisure activity or intellectual activity, or with respect to speech or similar type activities.

If the noise from the plant, for example, were to be so loud that one could not conduct a reasonable conversation under, you know, normal tones of voice at the normal one meter distance, and you had to shout to each other to hear each other, or even not even shout, but just really have a strain, a hard time communicating,

that would be, I would say, a substantial adverse effect.

And that, coupled with, you know, an increase in noise level would result in an impact.

MR. KRAMER: So if it was making you sick and your doctor came by to make a house call, admittedly this is a hypothetical -- and you couldn't communicate to your doctor that you were sick, that would be a problem?

MR. GREENE: That's fair to say, yes. If it would unduly interfere with routine communications, would just cause substantial effects to the residents of the area, or in some cases noise can be so loud it's a safety problem. People can't hear instructions and so forth.

So, if any of those levels were to be generated by the plant, that would be a substantial adverse effect. And coupled with the substantial increase in noise level, would result in impact. That's fair to say.

MR. KRAMER: But if those situations aren't present then in your definition there's no substantial impact under CEQA?

MR. GREENE: I have not evaluated the entire universe of potential effects, but we've

tried to cover the basic ones of health, sleep, speech, activities both passive and active, that are associated with residences. Even though, again, as I said, this area is really agricultural. The residences are ancillary. But, people live there.

So in looking at those type of activities people conduct routinely where they live, I found no evidence of an adverse effect on any of those activities.

MR. KRAMER: In making that analysis did you account for -- well, first let me ask you this. This area is a very quiet area in general, is that correct?

MR. GREENE: Some of the time it is. As I've testified, some of the time it's not quiet. Railroad train goes through, it's probably pretty tough to talk to anybody.

MR. KRAMER: Okay, but on average is this location quieter than let's say an urban area? Let's say Fresno, downtown Fresno.

MR. GREENE: I'd say that's a fair characterization. Yeah, it's a quieter area, yes.

MR. KRAMER: So did you account for the fact that this is quieter than many areas in

making those determinations about whether it would cause difficulty with communication and the other factors you just described?

MR. GREENE: I was cognizant of the fact that it may be quiet, but the issue is whether or not noise from the project, itself, will cause an adverse effect. Not whether or not the environment is quiet.

Now, there are some locations and some government agencies have recognized locations where quiet, per se, itself, is an integral feature, in fact an essential quality in order to preserve the purpose of that particular environment.

And that's been recognized by, for example, Federal Highway Administration. And there are some areas where quiet is very important. And they will apply a standard to those areas that is more stringent than residential use, in fact.

The numbers 57 decibels LEQ hourly happens to be the noise abatement criteria for those tracks of land where quiet is essential to its purpose.

So, in that respect, if that's what I

were evaluating I would look at that. But --

MR. KRAMER: But I gather you didn't consider this area to be one of those areas?

MR. GREENE: No. As a matter of fact there are very few of those areas designated by that particular agency in the entire United States, and there's none in California.

Those kind of areas are typically the rim of the Grand Canyon, or the national, you know, cemetery in Arlington. Some areas where quiet is really an integral part of its purpose. And in those areas one would apply a stringent requirement.

MR. KRAMER: In fact, isn't the term of art under CEQA for used to describe an impact that is of concern significant rather than substantial?

MR. WHEATLAND: Could we have a reference to what you're referring to? Because -- are you referring to the CEQA statute, the CEQA guidelines, appendix G?

MR. KRAMER: All of them. I'm really asking a general, and if he doesn't know he can say he doesn't know.

MR. WHEATLAND: Well, I think it's unfair -- I object to the question as being vague.

HEARING OFFICER WILLIAMS: He can -- do you understand the question?

MR. GREENE: No, I was going to ask for some clarification. I wasn't quite -- I think I know which terms, but if you could restate it I'd appreciate it.

MR. KRAMER: Well, do you understand, is the term of art in CEQA for an impact that is of concern is it called a substantial impact or a significant impact?

MR. GREENE: It's my understanding that the concern is if one ends up with, if at the end of the day you have a significant impact. The guidelines checklist, which again is a trigger mechanism for determining whether or not one needs to analyze the situation, it doesn't, of itself, decide that there are or are not significant impacts.

The term in the guidelines is a substantial increase, temporary or permanent, increase in noise level. That's one of the things that, if you check the box, you need to look at what will this substantial increase do. Will it have an adverse effect. If it has an adverse effect, the result would be an impact. If it

doesn't have an adverse effect, the result is not an impact.

MR. KRAMER: Okay, --

MR. GREENE: But the wording in there is is there a substantial change in the -- increase in the noise level.

MR. KRAMER: Well, let me see if I understand your analysis then. Did you find initially that there was a substantial increase in the noise levels would be due to the power plant?

MR. GREENE: Using what I believe is the appropriate descriptor metric to define the existing ambient noise level and to look at the future noise level with the plant, I came to the conclusion that there would not be a substantial increase.

And I believe that is consistent in that there is no definition in CEQA as to how many decibels constitute a substantial increase. It is not written that it's five or ten or 15 or some other number.

In my opinion, when I look at the increased levels I take into account the absolute level as well as the change. As I indicated earlier, if it's a difference -- if it's a change

from 10 decibels to 30, that might be a 20 decibel change, which is a big number, but it doesn't have any effect. And in some circumstances you wouldn't be able to hear it.

If the change were, on the other hand, from 63 decibels CNL to 68, that's only a five decibel change, but it goes above those limits that are considered compatible for residential use.

So in that instance a 5 db increase may be a significant change. I believe you have to look at both sides of that equation. You cannot just arbitrarily say I have this much increase, therefore I have a significant impact. You have to evaluate the effect of that increase.

MR. KRAMER: And is it fair to say that you're most concerned about not exceeding the thresholds where health or communication or one of those other areas would be affected that you described earlier?

MR. GREENE: What I said was that those appear to be the areas that are most represented in the literature as being of concern to people. We, also, don't want to violate the local ordinance, LORS, you know, if they have an

objective in their noise element. So other considerations are there.

But with respect to the effect of noise on people, we certainly do not want to adversely affect those areas that I spoke about.

MR. KRAMER: Does the literature you just referred to distinguish between relatively quiet rural areas and relatively noisy urban areas?

MR. GREENE: Some of the literature does; and the sense of that literature is that it requires -- I won't say requires -- say their findings have been, or their observations have been that it takes a larger increase in noise level change to cause complaints, or to cause people to claim they are annoyed. It takes a larger change of decibels when there's a quieter environment than it does in a noisier environment.

And when one thinks about that, it's a little bit intuitive. If it's a very quiet environment, that change does not cause adverse effects. It doesn't perhaps interfere with speech or sleep or those things I mentioned.

In a very noisy environment very small changes might, in fact, cause just that much more

annoyance, or in fact, interfere with speech to a greater degree.

And so a smaller change in a noisier environment is likely to cause people to state that they are more highly annoyed or to complain.

So the literature does address that there is a differential between the effects one would expect in quite environments versus noisy environments.

And several of the federal agencies have taken cognizance of that and allow a larger swing, if you will, in the noise level increases at very low ambient environments, and allow much lower increases when the existing environments are a lot higher.

MR. KRAMER: I want to show you a, I suppose it would be a piece of the literature. I presume it would be portions of the literature of which you are most proud, since you're the author.

UNIDENTIFIED SPEAKER: Can we go off the record?

HEARING OFFICER WILLIAMS: Off the record.

(Off the record.)

MR. KRAMER: I think we need to mark

this. This hasn't been given a number yet. I think it would be our exhibit, though, so it would be --

MR. WHEATLAND: We'd be proud to take this one as ours.

MR. KRAMER: Wait and see.

HEARING OFFICER WILLIAMS: So, next in order, S --

MR. KRAMER: 2S, as in Sam. And for the record this is a document, it's a paper given at the proceedings, the Spring Environmental Noise Conference in Bamff, Alberta, Canada. The title of the document, the paper itself, is on the second page, "Using Acoustic Signature Analyses to Resolve Community Noise Annoyance."

Are you familiar with this document, Mr. Greene?

MR. GREENE: Yes, it's been a little while since I wrote it, but I am familiar with it.

MR. KRAMER: Can you just describe briefly what this document was attempting to describe?

MR. GREENE: Yes. The essence of the document was to present a technique that was successfully utilized to help an operator of a

power plant to design the noise abatement, noise reduction measures that could reduce the noise output of the plant.

And as I indicated in my earlier testimony, power plants are quite complex entities. And they have various sources. In this case there was a couple things happening such that the noise from the plant was causing some complaints from the community.

The problem was that the operator of the plant just didn't know where the noise was coming from. They had done a fairly good job of putting enclosures and things around various machinery and had walked around the plant quite a bit, and just were scratching their heads, you know, what should we do, because we really don't know what's causing the problem.

So this paper attempted to describe a technique that we found successful in helping to pinpoint where the noise was coming from so they could focus their efforts on abating that particular noise, that source.

MR. KRAMER: Okay, and turn to page 9 of your paper. There are six bulleted conclusions. I'd ask you to read the first two bullets.

MR. GREENE: The first bullet is that communities with very low ambient noise levels may have acoustic expectations and tolerances that are different from those communities located in more typical urban noise environments. Pre-project community attitudinal surveys would be useful in these special environments.

MR. KRAMER: The second bullet.

MR. GREENE: Because of the above, plus the degree of novelty of new noise source, adjustments to standardized criteria noise levels for acceptable or compatible noise environments should be considered. Although routinely ignored by noise specialists and land use planners, adjusting criteria noise levels is not a new idea. For example, table 1 in the State of California's guidelines for the preparation and content of the noise elements of the general plan suggests using adjustment factors of up to plus and minus ten decibels to address existing outdoor ambient noise levels, and a plus five to minus ten decibel correction to account for a community's previous exposure and community attitudes.

MR. KRAMER: Did you or anyone, to your knowledge, with the applicant conduct any

community attitudinal surveys regarding noise in this case?

MR. GREENE: I do not have specific knowledge of whether that was done or not.

MR. KRAMER: You're not aware of one, though?

MR. GREENE: I'm not aware of one, other than what I'm aware of is there's been a very active ongoing dialogue with the community throughout this planning process.

MR. KRAMER: Dialogue regarding noise?

MR. GREENE: Noise, and, you know, how would it best be -- how could this plant best be constructed and still, you know, be a good addition to the community without creating undue noise complaints or noise effects.

MR. KRAMER: Now when you say that are you saying that you know that the topic was discussed?

MR. GREENE: I'm aware of discussions between the applicant and the residents of the area regarding noise from this plant, and some of the actions that the applicant might take regarding noise. And that's being conducted during the, you know, during this particular phase

of the project.

I think the best thing would be to also have one of our panel respond to the question, and that would be Mike Argentine, who has been the most involved in that process.

MR. KRAMER: Well, --

MR. WHEATLAND: I don't mean to interrupt but we had indicated at the beginning of our direct examination that Mr. Argentine is being offered here today to testify regarding the communication with the community. So he is available to answer questions.

MR. KRAMER: Right. At this point I'm inquiring as to the knowledge that this witness has that may have informed his expert opinion.

Were you present for those discussions?

MR. GREENE: Some of those discussions.

MR. KRAMER: What was the community input that you heard during those discussions, or the response from the community?

MR. GREENE: The responses that I heard when I was present during the conversations were positive. The community member, the person that was there, was receptive to having noise abatement features, you know, added to a house, for example.

They seemed very positive.

I didn't hear anything adverse. I was not present at numerous meetings, but those where I was there, the homeowner or resident was there, and Calpine representative was there. They seemed to be very receptive to the ideas.

MR. KRAMER: Were any demonstrations, physical demonstrations made for the public of what the increase in noise levels would sound like?

MR. GREENE: Not to my understanding, or not in my presence. Although I would ask you to maybe clarify the word demonstration.

MR. KRAMER: Well, in other words, did you play -- I've seen before people will play a tape or a CD to show them the difference between 30 decibels and 50 decibels, for instance.

MR. GREENE: No, that was not done specifically; but in one case the gentleman did ask, and he had a Ford F-whatever-something-or-other, you know, pickup truck, one of the diesel styles idling some distance away on the driveway. It was a fairly quiet truck, but you could still hear it.

And it was my opinion, I said about like

that. It's going to be a similar sound level. And it's mechanical type machinery, but no squeals, no, you know, it wasn't backfiring or squealing or howling. It was just idling.

And on that occasion that's the demonstration or example, real-world example that I gave to that gentleman.

MR. KRAMER: Okay, --

MR. GREENE: His comment was, oh, that's no -- okay, thanks.

MR. KRAMER: A diesel engine is different in character, its noise, than a steady state noise from a power plant, isn't it?

MR. GREENE: A truck idling at a constant rpm has a fairly constant noise output, but you're right, I wouldn't characterize the overall noise as exactly the same characteristic as a power plant, turbine power plant. But the noise levels were similar, in my opinion.

MR. KRAMER: The two bullets you just read from exhibit 2S, those were conclusions of yours, is that correct?

MR. GREENE: Actually if you look at the very top line of that page, those were observations and recommendations.

I did conclude that the community survey would be useful. And the second one speaks for itself. I say they should be considered.

MR. KRAMER: The adjustments, you mean?

MR. GREENE: The adjustments. And I certainly do not mean that in a regulatory -- this was not addressed to regulators. It was addressed to plant operators, persons.

I've been aware of these for a very long time. And as a former regulator, myself, I, you know, was asked, why aren't you incorporating these. The question comes up routinely.

And so I just, you know, wanted to make sure you understood the target audience for those two bullets.

MR. KRAMER: Well, okay, I don't understand why you're suggesting that it's adjustments would only be made, I guess, in the good graces of an applicant and --

MR. GREENE: That's not what I --

MR. KRAMER: -- aren't relevant --

MR. GREENE: You mischaracterized my statement.

MR. KRAMER: Well, did I hear you say that it's not something regulators should

consider?

MR. GREENE: That's correct. And I mean we can go further there is you'd like, but --

MR. KRAMER: Well, let me ask you, in this case was the goal of the applicant to try to reduce noise and be a good neighbor?

MR. GREENE: I'm sorry, in which case?

MR. KRAMER: The case that you described in exhibit 2S.

MR. GREENE: Yeah, in this case it was the goal of the applicant to find the source of the noise so that he could spend his funds and reduce that particular noise source.

MR. KRAMER: To what end? Just because or --

MR. GREENE: To -- no. To reduce the -- actually twofold. Obviously, to reduce the complaints from the community, but mostly to assuage the local city regulators who had told them they should either fix it or turn off the switch.

And so he was trying to do his best, you know, to find the problem first; and fix the problem as soon as they could.

MR. KRAMER: I have another document

that was described in Mr. Greene's CV. This needs a new number, which would be 2T, as in Thomas. It is entitled, noise source identification using acoustic signature and predicted magnitude.

From the header, again, it was delivered at a noise conference in 1997 at Pennsylvania State University.

Are you familiar with this document?

MR. GREENE: Yes, it essentially is a little different treatment of the same plant, same program, a little different audience, a little different approach to the presentation. But it represents the same approach and the same concern.

MR. KRAMER: So, again, it's about that same specific power plant?

MR. GREENE: Yes, that is correct.

MR. KRAMER: And was the area in which the power plant was located similar in character as far as background or ambient noise goes, to the project site in this case?

MR. GREENE: I didn't conduct the ambient survey there, so --

MR. WHEATLAND: Can I just object to the question. You asked background or ambient. I was wondering which one you meant.

MR. KRAMER: Let's go with ambient.

MR. GREENE: Again, I would have to look back at the record. I didn't conduct the ambient measurements there, so.

MR. KRAMER: Well, let me direct you to page 110 of this document, the second full paragraph. Please read that for yourself and see if that refreshes your recollection.

MR. GREENE: I believe these are accurate.

MR. KRAMER: So what does it describe the ambient noise levels as in that case?

MR. GREENE: Between 35 and 40 during the nighttime and 40 to 45 dba during the daytime.

MR. KRAMER: That's the first full paragraph. I was referring to the second where it describes them as very low.

MR. GREENE: Oh, let's see, I hadn't read that yet.

I would agree that noise levels in the 30 to 40 db, within the 30 db area, 40 db area could be described as low or quiet.

MR. KRAMER: What would the comparable noise levels be for this project?

MR. GREENE: Well, do I understand you

want to know the San Joaquin Valley project, the noise levels in the surrounding area? How they compare to these numbers?

MR. KRAMER: Yeah, right. To the numbers you gave here, and please try to use similar units.

MR. GREENE: Right.

MR. KRAMER: Although you haven't described whether this is LEQ, LDN or --

MR. GREENE: Well, these would be LEQ values, but that's a good point. We have 24-hour LEQs for the five locations around the project, the instant project. And I'll give them by locations.

And there are two --

MR. WHEATLAND: Can you just --

MR. GREENE: Or just tell the exhibit?

MR. WHEATLAND: -- refer to these. Well, you were -- give -- in the transcript, for the record, give us the page number.

MR. GREENE: This is on page 47. And it's called table 2, summary of monitoring location 24-hour equivalent noise levels.

There are two numbers given because an attempt was made to record two days worth of data.

As it turns out a couple of locations recorded only 37 hours of data.

But at the locations using a similar descriptor around the San Joaquin Valley Energy Center, G-1 gave a 42 and a 42. G-2 gave a 61 and a 61. Those are the ones that only had the 37 hours worth of data, so the second day was -- I mean they represent only 24 hours of data.

And G-3 had a 53 and a 48. G-4 had a 58 and a 54. And G-5 had a 66 and a 57. So as you can see, there's some variability from day to day at some of those locations.

But, in general, between 42 and 66.

MR. KRAMER: You've raised a question for us. Please compare on table 2, which is a summary of 24-hour equivalent noise levels expressed as LEQ, and table 4, which is summary of nighttime, 10:00 p.m. to 7:00 a.m., noise levels, again expressed as LEQ, to RI. Those two tables appear to have identical data. Is that --

MR. GREENE: I think you're correct; that's potentially an error.

MR. KRAMER: And what is it that leads you to suspect that may be an error?

MR. GREENE: They're identical, which

is --

MR. KRAMER: And why shouldn't they be?

MR. GREENE: In almost any urbanized environment unless there is an overriding, you know, single, prominent, 24-hour-a-day factory or something, the noise levels generally change from day to night.

Unlike the statement, though, in the final staff assessment, they aren't necessarily quieter at night. But they are different.

MR. KRAMER: In this case, though, based on --

MR. GREENE: We'll take --

MR. KRAMER: Shall we go off the record for a moment to let you look at that?

MR. GREENE: Please. Yes, if you would.

HEARING OFFICER WILLIAMS: Off the record.

(Off the record.)

MR. KRAMER: I think I had a question pending to explain the apparent inconsistency between tables 2 and 4.

MR. GREENE: Yes, I was in the middle of answering your question. It turns out that the speculation that the numbers are mysteriously

equal and that might be a problem, is true. It's a duplicate and edit that didn't edit.

However, the correct numbers are included in our testimony, just in a later table in the document. And what I will do is respond from table 3 and from table 8, to split those out and give you the daytime values and the nighttime values separately.

MR. KRAMER: So should we be writing the new numbers in table 4, is that what you're saying?

MR. GREENE: No, actually I think table 4 we just, you know, should be corrected.

MR. WHEATLAND: If you'd like to do that.

MR. GREENE: Yeah, either way.

MR. KRAMER: That's what I'll do.

MR. GREENE: No, well, let me respond in the manner that I wanted to, and then we can provide the extra information.

From table 3 the daytime sound levels, LEQ, range from 43 to 67. So that's the range encompassing all the locations. And we can read them out separately so you could update your table, if you wish. So daytime 43 to 67.

Nighttime, and this would be consistent with the acoustical behavior of most environmental locations, is that it ranges from 36 to 64.

MR. KRAMER: And you're looking at the existing column in table 8?

MR. GREENE: And that's the existing column in table 8.

MR. KRAMER: So if I just made a note on table 4, see existing on table 8 --

MR. GREENE: Go see table 8, yeah.

MR. KRAMER: Yeah, okay.

MR. GREENE: I apologize for that. But sometimes it happens.

MR. KRAMER: Now, if you're still on table 8 --

MR. GREENE: Yes.

MR. KRAMER: Residents R10, I guess that's day one, monitoring note, there's a 64 db existing reading.

MR. GREENE: Yes.

MR. KRAMER: That's quite a bit higher than any of the other readings, would you agree? The next highest being 52 decibels it looks like.

MR. GREENE: On the following day at that location. And also on the first day at R5.

MR. KRAMER: Right, so the next highest number is 12 db below that. Is that an anomaly, or do you have any explanation for why that 64 occurred?

MR. GREENE: I would only have speculation. I wasn't there, nor was, you know, a human. The noise monitors are set out and collect data. So I wouldn't have an explanation as to why that occurred. It's not unusual to get a very large swing, but it would give one pause to, you know, why is it higher.

It's kind of the age-old problem to doing field noise surveys, you know. If you're measuring aircraft flyovers, what about the airplane that crashed into your microphone, you know. Is that a high level, is that a representative level. Or you're trying to measure near the side of the road and the ambulance comes by or whatever it happens to be. There are always these events.

But I can't explain it. One could discount it and say well, the next day was measured 52, you know, that's consistent with some of the other measurements. Maybe it's 52, but in fact, maybe the 52 wasn't representative, and it's

664. I don't have an explanation for you, but at least on one of those days it was 52.

MR. KRAMER: But you'd agree it looks anomalous?

MR. GREENE: It is a higher number, there's no doubt about that, yes.

MR. KRAMER: Moving on to T, as in Tom. At the bottom of page 113 of that document there's again six bulleted conclusions --

MR. GREENE: Sorry, what page, please?

MR. KRAMER: Page 113, the observations and recommendations section.

MR. GREENE: Yes.

MR. KRAMER: These appear to be the same as the observations and recommendations in the previous document we discussed, 2S, is that correct?

MR. GREENE: I'd have to refresh my memory here. Give me a minute.

Actually I don't believe they are the same. You said you had a bulleted list? Okay. Not the conclusions, but at the bottom of that page, section 7, is that the section --

MR. KRAMER: Right.

MR. GREENE: -- to which you're

referring? Okay.

MR. KRAMER: The last time I referred to these as conclusions. You corrected me and said they were observations --

MR. GREENE: Observations and recommendations.

MR. KRAMER: -- and recommendations.

MR. GREENE: Yes. That is correct. Appears that the same bullets are included.

MR. KRAMER: In the second bullet this correction factor that's alluded to, it's called -- actually I used the wrong term again, it's an adjustment factor?

MR. GREENE: Correct.

MR. KRAMER: Of up to plus or minus 10 decibels. And that's to address existing outdoor ambient noise levels.

And a plus 5 to minus 10 decibel correction to account for community's previous exposure and community attitudes.

In the case of the community's previous exposure or community attitudes, would I be correct in interpreting that phrase to describe, among other things, this notion that we have discussed previously, and that you mentioned in

this document that the community may have higher expectations regarding maintaining quiet because they are in such a quiet environment to begin with? Is that what they're talking about -- you are talking about there?

MR. GREENE: That is one thing that I was considering at that point, that there is some newer literature of which I'm aware, that would probably dissuade me from that position.

MR. KRAMER: You said dissuade you?

MR. GREENE: Yes. But that's what the adjustment factor was --

MR. KRAMER: Okay.

MR. GREENE: -- one reason it was put there.

MR. KRAMER: Can you describe this newer literature you just referred to?

MR. GREENE: Actually it's in my prepared testimony.

(Pause.)

MR. GREENE: Generally -- it's an article; I will find it for you. What the researcher's report was that there is a normal distribution of expectations among people as to quiet or noisy.

And it was a commonly held theory that when someone lived in a quiet environment they lived there because they had a reason, they liked that, and they had an expectation for the quiet, to a greater degree than those people who lived in noisy areas.

And what the researcher found was people lived where they have to live, because they have to get a job, or that's what they can afford, whatever it might be. And that there was a full range of expectations on the part of people normally distributed.

Some people who lived in noisy environments would love to live quiet. Other people who happen to live in quiet environments would just as soon move into the downtown part of the city.

So, where you live really wasn't as much of a determinant of your expectation as what had previously been thought.

And I believe that is -- yeah, it's on page 69 of the prefiled testimony. And it's basically the two middle paragraphs are the results of the discussion.

And the Fields paper is, as you can see,

1998 publication. And I didn't read it in '98, but read it, you know, after that point, doing this research.

And the two papers that you presented to ask me questions about were done, I believe, in '96 and '97 respectively. So they came out prior to this research being even published. So that's the slight area where I would say my opinion has been changed, based on the available scientific information.

That's actually the third full paragraph on that page 69 in my testimony.

MR. KRAMER: Okay. So then you're saying you're less likely to recommend an adjustment factor now than you were when you wrote these papers?

MR. GREENE: Based on expectations, yes, that's correct.

MR. KRAMER: Okay, but let me understand how the adjustment factor would work.

MR. GREENE: Sure.

MR. KRAMER: And let's treat this as a hypothetical question, but in an area where people are thought to have a heightened interest, if you will, in maintaining their quiet, how would you

apply the adjustment factor to set a level of acceptable noise for them?

Do you understand the question?

MR. GREENE: I understand the question, but --

MR. KRAMER: Well, let me ask it in another way.

MR. GREENE: Well, I understand you to say, you know, how would this work. It's a compound question, but I think I'll take pieces at a time. How would it work and how would you use it to set the noise levels that are appropriate for the location, the two pieces.

How it works I'll describe. In my opinion, it was not necessarily established to set the noise levels for a project, for instance. It's not a regulatory approach. But we can get to that in the second part.

But how you use it is fairly straightforward. One has a table, generally, or a matrix of -- noise compatibility chart is what it's called in most cases. It will be different kinds of land use, ranging from single family residential to multifamily to apartments and then in areas it might even include industrial use,

commercial use, parklands, hospitals, you know, anything in this matrix.

And they lay out a range of environmental noise that is either clearly acceptable or normally acceptable, conditionally acceptable, normally unacceptable, and then totally unacceptable. Those are the four general categories. These ranges apply to different kind of land use.

So if you, again, did an analysis of a housing tract next to a freeway and found out that they would have a -- these are typically done in LDN, DNL metrics in the earlier versions in California in CNEL, but you'd find out that your project's going to -- this highway will generate a 63 DNL. Let's use that hypothetical as an example.

And then I would go to the chart and I would look up the type of land use, single family residential. And I'd go over there and find out where 63 DNL fell and in what kind of range was it in. And probably it could be normally acceptable, which meant compatible. It could be conditionally acceptable, which meant you might have to upgrade the windows and doors or do some extra action. So

that's the way the standard table and noise level interacts.

Now, with the adjustments you would look at your project and you'd still have that 63 number, but then you would go in and look at the adjustments. Does the population there have any experience with this noise source; is this just a modification of an existing highway, or is this a totally new noise source.

If it's modification and they have experience with it, then there's no correction. If this was a totally new noise source then you would have a correction. So you would add that correction, or subtract it as the case might be, for the various adjustments.

And so you would take your 63 and you would arbitrarily -- let's just take worst case and say they have -- it's a brand new highway, it's going to be right next to their house, they have no prior exposure to it. The person who put together the adjustment factor says, they're not going to like this very much. So we're going to add 10. And so that you may calculate a 63, but the community reaction is going to be like a 73 with this brand new highway here.

And so then you would look at your number and say, no, not normally acceptable, not conditionally acceptable, normally unacceptable but maybe if I do something I'm okay. So you've moved that compatibility into a different category by the use of the adjustment factor.

Now that assumes that the adjustment factor is correct. It assumes that the population that you have will behave as the person who invented the correction thought they should behave, or were likely to behave.

And it's a pretty big step, you know, it's a 10 db step. Well, should it be a 10 db step or an 8 or a 12, you know. And I think you start to see some of the reasons why I have problems of applying the correction factors as regulatory standards, because it introduces a whole new area of subjectivity into an area that has a lot of subjectivity as it is.

Because we move from physical acoustics to perception and psycho-acoustics, and then into political acoustics and we have a lot of issues, you know, what people would like, not like, what they complain about, what they want.

And just applying an arbitrary set of

corrections or adjustments, let's keep the right word, adjustments, I believe introduces another wild card, another factor in here of subjectivity on several levels.

MR. KRAMER: Let me stop you there, because you've gone beyond answering the question. I was simply looking for how the math worked, whether you add in the adjustment factor to the -- tell me if I'm wrong, but I gather you could do it two ways.

You could either reduce the limit, in other words, the amount of physical noise that the source can produce by the adjustment factor; or in analyzing the impacts of the adjustment factor, you add -- the noise from the source, you add the adjustment factor to it and that's the number you analyze. They both get you the same place, right? Assuming that the adjustment factor should be applied.

MR. GREENE: Assuming that the adjustment factor should be applied, take that first. And then you can -- you either penalize your plant as designed, or your project as designed; or you can give it a benefit or a credit, depending on which adjustment factors you

believe are appropriate in the circumstance.

MR. KRAMER: Well, understand, I'm only talking about the adjustment factor for people who are in a quiet rural environment who are thought to have a higher expectation of maintaining that than average.

MR. GREENE: Well, I think I've answered the question. You take the number. If you feel that they fit in this arbitrary category, and you take the number that's in the adjustment column. There's no provisions for modification. You just say okay, it's worth ten. And you add that to the number. It's a simple addition.

If you modified your project you can modify it, sure, like anything else.

MR. KRAMER: But if you were a regulator and trying to set a regulatory standard, you would have to reduce the standard in order to account for it, correct? You would subtract the adjustment factor from what would be the otherwise acceptable maximum noise level from the source?

MR. WHEATLAND: I'd object to the question. It assumes that this would be applied under a regulatory standard. The witness, at the outset, said that that was not the intent of his

proposed language.

MR. KRAMER: I'm sorry, we're not talking about his intent. This is a question so we can learn how the formula applies if the Committee -- well, for purposes of discussing their testimony.

HEARING OFFICER WILLIAMS: Do you understand the question?

MR. GREENE: I believe I understand the question. I mean as a former regulator I did not apply it for the reasons I've stated.

But you could add the arbitrary values of the adjustment to the project. Then look at your compatibility chart and make a determination based on that information.

MR. KRAMER: Right, but if --

MR. GREENE: Or you can modify your project to account for all or some of the adjustment and come up with a different, you know, different number. So there's a couple things one could do. I'm not sure they get you to the same location, but you can either adjust the project or you can put the number out there and see what pops up.

I just believe the subjectivity involved

in trying to --

MR. KRAMER: I'm sorry, you've gone beyond the scope of the question.

MR. GREENE: Okay.

MR. KRAMER: You're also being repetitive at this point. And in the interest of time let me move on.

I'm going to show you one more report. This was on our exhibit list on Friday. And you were not specifically provided a copy, but your counsel certainly was. This is not written by you. It is exhibit 2 -- H, as in Henry.

This is an article entitled, on normalizing DNL to provide better correlation with response. The author is Paul D. Schomer, S-c-h-o-m-e-r. And it is in the December 2002 issue of "Sound and Vibration."

Are you familiar with the Journal of Sound and Vibration?

MR. GREENE: Yes, I am.

MR. KRAMER: Are you a subscriber?

MR. GREENE: Yes, I am.

MR. KRAMER: Have you reviewed this article?

MR. GREENE: I have read the article,

yes.

MR. KRAMER: Do you agree with its conclusions?

MR. GREENE: As with many of Paul's, or Dr. Schomer's conclusions, I agree with some and disagree with others.

MR. KRAMER: Okay, let me --

MR. GREENE: And have for about 20 years.

MR. KRAMER: I guess that makes for a horse race, right?

Please turn to page 15 of that article and look at table 1 which lists correction factors for various scenarios.

MR. GREENE: Yes, I see that.

MR. KRAMER: The second item in the left column is correction for outdoor noise level measured in absence of intruding noise.

MR. GREENE: Yes.

MR. KRAMER: And then they have some descriptions to the right of that.

MR. GREENE: Yes.

MR. KRAMER: One of which is quiet suburban or rural community remote from large cities and from industrial activity and trucking.

And they show a correction factor of plus ten.

MR. GREENE: Um-hum.

MR. KRAMER: And the way they describe the correction is correction added to measure DNL.

MR. GREENE: Um-hum.

MR. KRAMER: That's consistent with the way you described how an adjustment factor would be applied, is that correct?

MR. GREENE: That's correct, the process is consistent.

MR. KRAMER: The applicant is proposing various noise impact or mitigations at the sensitive receptors in the vicinity of the project.

Yet, I gather from your testimony that you don't believe that the project causes any significant environmental impacts in the first instance.

So my question for you is why is the applicant providing those measures when you're suggesting that they're not strictly necessary?

MR. WHEATLAND: Okay, that question we'd like directed to Mr. Argentine. The question is why is the applicant making this proposal.

MR. KRAMER: That's fine, if you --

MR. ARGENTINE: The reason we made the proposals was that, you know, as Calpine we recognize that we were going to be in the vicinity of San Joaquin for, you know, more than 30 years. So we wanted to demonstrate to everyone there that we were good corporate citizens.

MR. KRAMER: Okay, why did you choose the route of providing noise mitigation as opposed to say providing improvements to the community center or funding police protection or some other avenue?

MR. ARGENTINE: The reason noise mitigation was provided for the local residences there, in lieu of doing police protection funding or whatever is that, you know, we were already paying property taxes. And we felt that, you know, we're doubling the general fund. And if you look at the socioeconomics section of the AFC you'll see that.

We felt this would be the best way to provide positive impacts to receptors.

MR. KRAMER: So you must have had some expectation that they would be concerned about the increase in noise levels?

MR. ARGENTINE: Actually, we did not.

MR. KRAMER: Okay, back to Mr. Greene. You referred to Los Medanos --

MR. GREENE: Yes.

MR. KRAMER: -- Power Plant and described, I believe you said the Commission had set a noise limit for that project at L90 equals 47 decibels?

MR. GREENE: That's my recollection, yes.

MR. KRAMER: Where is that project located?

MR. GREENE: It's in Pittsburg, California; the general area is called the East Bay area of California, you know, San Francisco east.

MR. KRAMER: Okay. And is that area, would you characterize that as an urbanized area, suburban or rural or what?

MR. GREENE: Well, it's definitely not rural. It's mixed use. There are industrial facilities; there are little league baseball diamonds. Relatively, you know, small houses on smaller streets. And some local roads in there.

There's actually, I think, some residents that live on boats in a marina or marina

area. It's a mixed use area.

MR. KRAMER: Is it more urbanized than the San Joaquin location for this project?

MR. GREENE: Portions of it are more urbanized than the agricultural areas of San Joaquin, and probably similar to the areas within the actual City of San Joaquin.

There definitely are more people that live in the vicinity of the Los Medanos Plant than there are people that live, or would live around the San Joaquin Plant.

MR. KRAMER: So more sensitive receptors, then?

MR. GREENE: There's more sensitive receptors, yes.

MR. FREITAS: What's the name of that plant? I'm sorry.

MR. GREENE: It was originally designated the PDEF, Pittsburg District Energy Facility. And subsequently had been called the Los Medanos Energy Center, I think it is.

MR. FREITAS: That's in --

MR. GREENE: Pittsburg, California.

MR. KRAMER: Were the ambient noise levels for that Los Medanos project greater than,

less than, or approximately the same as the ambient levels at the San Joaquin project?

MR. GREENE: I'd say in general they were -- where they were taken, they were higher. Most of the levels were measured adjacent to roadways or with a direct view of the industrial area. So, in general, I'd say the ambient levels were higher at that plant.

MR. KRAMER: Are you aware of a plant location in California that would be comparable as far as ambient noise levels prior to operation or construction to this project?

MR. GREENE: No, I'm not.

MR. KRAMER: Is it fair to say this project is in an area that's quieter than any other area in which a power plant has attempted to be sited in California?

MR. GREENE: No, I wouldn't say that. I just said I'm not aware of what all the other noise levels are in areas.

MR. KRAMER: Okay, so you don't have enough information to offer an opinion?

MR. GREENE: No.

MR. KRAMER: One of the measures that the applicant mentions in its testimony at page 50

to mitigate noise at the receptors is local noise barriers. The sentence is in the middle of the page above section E heading.

It says: Local noise barriers would also be feasible for those locations where beneficial exterior noise reduction would result.

In the letters that you submitted as exhibits 4B, 2 through 4B-8, there's no mention of any local noise barriers that we could find, is that correct?

MR. GREENE: That's correct.

MR. KRAMER: Is that no longer being proposed as a solution, or --

MR. GREENE: No. Actually the addition of local noise barriers came about after the letters went out with an offer of sound insulation. There's some background.

My involvement in it is when the applicant asked, based on a conversation that he had, and I would refer to the applicant to directly answer that, because I wasn't a party to the conversation.

But asked, could we look at feasibility of localized sound barriers, exterior barriers, for those houses where we evaluated the efficacy

of improving the windows and improving the doors and such.

And so we did look at that as an additional, perhaps an additional measure in some places, to again enhance the environment.

MR. KRAMER: In lay terms are we talking basically about sound walls, is that fair?

MR. GREENE: Not in every case, but -- and that's why I use the word barrier rather than sound wall. In a couple of instances, it's another one of these acoustic terms, areas of frequent human use were really a couple of plastic chairs on a small piece of concrete in front of a manufactured house where somebody might want to sit and look out on the fields.

So in those cases my thought would be a transparent barrier like para-glass or something. That just gives them a little bit of protection from the highway noise or agriculture noise or plant noise, whatever it might be. So that would be not really a sound wall in the traditional sense.

And a couple of other areas it would be more of a sound wall around a play area or back yard.

MR. KRAMER: Is it generally true that these barriers are more effective the closer they are placed to the source of the noise?

MR. GREENE: That is not always correct, actually. The efficacy of a free-standing what we call a screen wall type barrier, a think screen wall barrier, is improved when it is closer to the source, or if it is closer to the receptor. And has the least value if it's at the mid-point between those two.

So it can be equally effective placed very close to the receptor as it would be placed very close to the source. And in most cases it's going to be shorter or smaller, because most receptors we use a five-foot height. And sources are whatever they are, trucks are 11 feet, 6 inches, and power plants are 40 feet, whatever it might be.

So the ability of the sound wall to work close to the receptor is good. And its use would have to be evaluated on a more careful acoustic basis.

MR. KRAMER: In your testimony on page 54 you indicate that right above the heading for section G, you say the staff in Fresno County

concurs with the applicant and have clearly indicated that the County does not consider the County ordinance to be applicable to this project.

I wanted to ask you if the communication from the County is reflected in your exhibit 4B-9? And I'll just give you a copy at this point.

My question is simply is this the communication that's the source of that statement?

MR. GREENE: In this area I would defer to Mike Argentine.

MR. ARGENTINE: That's right.

MR. KRAMER: Okay. Mr. Greene, if you'd look at the middle paragraph of that letter, and if you could read the second sentence of that middle paragraph.

MR. GREENE: Starting with, this department?

MR. KRAMER: Yes.

MR. GREENE: This department, and that refers to, I believe, the adult services department of children and family services department, or the employment and temporary assistance department, I'm looking just at the letterhead.

MR. TRASK: I believe it's the

Department of Community Health.

MR. GREENE: Okay, thank you. It says the department concurs with the staff assessment of the potential noise impacts to nearby noise sensitive receivers both in the unincorporated area of Fresno County and the City of San Joaquin. Including the recommended mitigation measures which should insure compliance with the applicable City and County noise ordinances.

MR. KRAMER: Do you interpret that as a full concurrence of the County of Fresno with the applicant's positions regarding noise?

MR. WHEATLAND: I'm going to object to the question because it refers just to that sentence and doesn't refer also to the totality of the letter.

MR. KRAMER: Okay. We'll just have this admitted -- I think they already did. And we'll argue the significance in the briefs, then.

Could we go off the record for a second?

HEARING OFFICER WILLIAMS: Sure. Off the record.

(Off the record.)

MR. KRAMER: Please turn to page 57 of your prefiled testimony. And I want to direct

your attention to the paragraph in the middle of that, upper middle, that begins, hundreds of local agencies. And please read that paragraph.

MR. GREENE: Hundreds of local agencies within California use the LDN to assess noise land use compatibility and determine noise impact for all types of projects.

Federal nontransportation agencies, for example the Federal Energy Regulatory Commission, also use LDN for their environmental evaluations.

In their, quote, draft guidelines for the measurement and assessment of low level ambient noise, scientists from the acoustics facility at the Volpe Center define low level ambient noise in terms of DNL/LDN as an outdoor sound environment typical of a remote suburban setting or a rural public lands setting, end quote, where, quote, characteristic average day/night sound levels, DNL or LDN, would generally be less than 45 db, and the everyday sounds of nature, for example wind blowing in trees and birds chirping, would be a prominent contributor to the DNL, end quote.

It is footnoted at that point, and I will say that -- let me continue the reading of

the paragraph: The use of LDN therefore is not limited to transportation agencies or projects.

And the footnote references Fleming, Gregg, et al, report issued March 9, 1998, number DTS-34FAA-865LR1, the John A. Volpe National Transportation System Center Acoustics Facility in Cambridge, Massachusetts.

MR. KRAMER: Okay, are you saying here that 45 LDN would be an appropriate sound level for the sensitive receptors in the vicinity of this power project?

MR. GREENE: Not at all. What I'm saying is that an agency of the federal government, highly respected acousticians and researchers, characterize a low level ambient noise and characteristic average day/night sound levels less than 45.

That's what they call a low remote setting, a rural public lands setting. So what they're saying is that if you try to characterize land according to its ambient noise level, if you have lands where the ambient noise level is 45. Then in terms of DNL, day/night level, then that qualifies as a low level ambient setting.

And that's the reason for this citation.

MR. KRAMER: Okay. Is that standard, in your opinion, suitable for application to this power plant, 45 LDN?

MR. GREENE: It's not a standard.

MR. KRAMER: Well would it be suitable to apply a 45 db guideline to the noise output of this power plant in what sounds to me to be a similar setting?

MR. WHEATLAND: Just for clarification, 45 dba DNL?

MR. KRAMER: LDN, yes.

MR. GREENE: No, it would not be appropriate at all.

MR. KRAMER: What is it that you're proposing as a standard?

MR. GREENE: The proposed condition of certification known as noise-6 is to have a standard of plant noise at the nearest residential receptor not to exceed 49 dba either LEQ or L90, your preference.

MR. KRAMER: Okay, so you're proposing -- are you really proposing either LEQ or L90? I think you just said that.

MR. GREENE: For our plant?

MR. KRAMER: Yes.

MR. GREENE: For condition of certification noise-6?

MR. KRAMER: Correct.

MR. GREENE: I believe we're proposing L90 49.

MR. KRAMER: So what would that be if you converted 49 dba L90 to LEQ?

MR. GREENE: Approximately 55 LDN, DNL, as we've stated earlier. Just under that.

MR. KRAMER: Okay, thank you. L90 is the lower -- represents the lower level components of the total noise, correct?

MR. GREENE: L90 represents the sound level exceeded 90 percent of the, quote, time, which means the duration of the measurement period.

MR. KRAMER: Right, so if you set a standard at 49 dba L90, there could be noise components that are much louder than that, correct?

MR. GREENE: It's totally dependent on the noise source. For a power plant I'd say that the staff, your own staff is probably in a better position to discuss the benefits or not of L90, but in my opinion for a relatively constant source

like a power plant, which fluctuates a little bit, but not by very much, the differences between L90 and LEQ are on the order of one or two db, one or two decibels, an imperceptible difference.

MR. KRAMER: So are you saying then that the fluctuations in the power plant noise are imperceptible?

MR. GREENE: I'm saying that the fluctuations of one or two decibels in power plant noise, in terms of their amplitude, are probably imperceptible in an environment other than a laboratory environment. That one or two decibels is very difficult to detect.

MR. KRAMER: Okay, and sensitive receptors live in the field and not in the laboratory.

MR. GREENE: I would say that's correct. Most persons would have a tough time telling you they heard a difference of one db or two db.

MR. KRAMER: Please turn to your attachment G, as in George, to your prefiled testimony. There you describe, the third bullet indicates that noise reduction for dwellings, the goal is to provide a minimum of 20 decibels attenuation from outside to inside the dwelling,

is that correct?

MR. GREENE: No, it's not. That wasn't the goal, that was to establish a minimum performance level.

MR. KRAMER: Okay. Isn't it true, I believe you said earlier that a normal dwelling provides 15 to 20 decibels of attenuation, at least that's what you assumed in general?

MR. GREENE: With windows partially open.

MR. KRAMER: With windows partially open it's 15 to 20?

MR. GREENE: No. With windows partially open it's 13 to 15.

MR. KRAMER: Okay, with windows closed it would be?

MR. GREENE: With windows closed prescriptive value in the State of California is 20. Generally it runs a couple points better than that. So we established that it would at least meet, you know, anything that would be done would at least meet the standard correct building codes and provide a 20.

It would be our expectation that we would get, you know, better performance than that.

But this was written as a minimum performance of 20.

MR. KRAMER: But didn't you say earlier that unmodified houses already provide that level of reduction?

MR. GREENE: Properly built and maintained houses in the State of California that are constructed in accordance with the Uniform Building Code are given a prescriptive value of 20 decibels of noise reduction in the guidelines provided by the state. And that's very similar to the guidelines provided by the Federal Highway Administration, the Federal Transit Administration and the Federal Aviation Administration.

There's a range, but in general, correctly a properly constructed house in California will give you 20 decibels when you close up the windows from outside to inside.

MR. KRAMER: So if the home is already providing that and you're simply promising to provide what it already provides, what value are you providing at all?

MR. GREENE: I'm not saying the home already provides that. I'm saying irrespective of what the home provides now, which may be less than

this. In some cases homes that were evaluated had broken and cracked windows. In some cases they had louvered windows, which don't provide much sound attenuation.

So our goal here was to say it's going to be at least as good as a brand new house constructed in California in accordance with the appropriate building codes.

MR. KRAMER: Okay, finally on page 71 you refer to the Schultz curve.

MR. GREENE: Yes, 71.

MR. KRAMER: And I wanted to ask you --

MR. GREENE: Could you be a little more specific?

MR. KRAMER: It's right at the top of the page in the first continued paragraph from the previous page. You're familiar with the Schultz curve, I gather?

MR. GREENE: Yes, I am.

MR. KRAMER: I think that's enough to be able to answer my question which is what type of noise sources were used to develop that curve, if you know?

MR. GREENE: A variety of noise sources were used, the preponderance of them being

transportation noise sources. But there were also industrial sources and other sources.

And as you may see further along in the testimony the Schultz curve has been generalized to be applicable for various kinds of sources.

MR. KRAMER: Thank you, that concludes our cross-examination.

HEARING OFFICER WILLIAMS: Mr. Freitas. Do you have questions, Mr. Freitas?

MR. FREITAS: Yes. I'm sorry. I do. I was looking for a proximity map. Left the one that I was bringing, that they had yesterday, out in the car.

CROSS-EXAMINATION

BY MR. FREITAS:

Q Could you go to -- could I get your name, please, Mr. --

MR. GREENE: Rob. Mr. Greene or Rob.

MR. FREITAS: Bob. Is it okay if I call you --

MR. GREENE: R-o-b.

MR. FREITAS: Rob? Okay.

MR. GREENE: Yeah, that's fine.

MR. FREITAS: Rob, could you go to the, I believe it's the staff assessment San Joaquin

Valley Energy Center, page 5.4-4.

MR. GREENE: If you'll give me a moment to dig it out. Could you repeat that page for me again, please.

MR. FREITAS: 5.4-4. It says land use at the lower left-hand corner.

MR. GREENE: Oh, land use.

MR. GREENE: We didn't even bring that.

MR. FREITAS: You didn't bring it, okay.

MR. GREENE: I don't have it, but why don't you --

MR. FREITAS: I'll just show you this one here.

MR. TRASK: Are you referring to the staff assessment or the addendum?

MR. FREITAS: Staff assessment.

MR. TRASK: Oh, yes, that one section had bad page numbers. It's actually 4.5.

MR. FREITAS: Just for the benefit of everybody in the room, Rob, would you mind just reading that, the portions that I have highlighted there regarding the ordinance, the City ordinance.

MR. WHEATLAND: Before he does can I take a look at it.

MR. FREITAS: Sure. Absolutely.

MR. WHEATLAND: I have no objections.

MR. GREENE: Okay, this excerpt is from the -- dated July 16, 2002, page number 5.4-4. Excerpt highlighted in yellow: Title says City of San Joaquin zoning ordinance. And then there's a highlighted paragraph indicating the manufacturing zones provide standards for protecting the public health and welfare and compatibility with surrounding land uses, including visual screening and traffic circulation.

There's another highlight which is a portion of a sentence further down indicating, quote, "the granting of a variance would not be materially detrimental to the public welfare or to properties in the vicinity, and where the granting of the variance will not adversely affect the general plan or the purpose of the zoning ordinance."

Those are the areas?

MR. FREITAS: Right.

MR. GREENE: Would you like this document back --

MR. FREITAS: Yes. Would it be safe to say that the City of San Joaquin, under this language of their zoning ordinance, would be

capable of granting a variance to the power plant regarding noise levels, as they're considered to be health hazards under this ordinance language?

MR. WHEATLAND: Mr. Freitas, I think that -- I object to the question. I think it assumes a couple of different things.

MR. FREITAS: Okay that's fine.

MR. WHEATLAND: The first thing it assumes is that the plant would require a variance, and I'm not sure that it does. And the second thing is that it would assume that, in fact, there has been a finding by the City that it constitutes a health hazard, and I don't believe that finding's been made.

MR. FREITAS: I don't think I stated that as it being a health hazard. Let me reword the question then.

Under the language of the ordinance it states that the granting of a variance would not be materially detrimental to the public welfare.

Now, as noise relates to the public welfare, in your professional and scientific opinion, would the zoning ordinance allow for a variance to be granted --

HEARING OFFICER WILLIAMS: Mr. Freitas,

I'm afraid that that question really -- you're limited in your cross-examination to the scope of the direct.

MR. FREITAS: Okay.

HEARING OFFICER WILLIAMS: So, that question really is outside of the scope of what was discussed on direct.

MR. FREITAS: Okay, let me lay a foundation then. We have an industrial park, it's 100 percent where the power plant's located. Calpine's making up a percentage of this park. What percentage I don't know, but let's just hypothetically make it 40 percent for the sake of conversation. The rest of the park is 60 percent. It's 40 percent occupied.

If Calpine were to be allowed to run with the noise levels as you've established in your research, if you were to come back in two years after they were running, and the industrial park was now 100 percent occupied, and you were asked to do the same study for noise levels and impacts, what would your calculations tell you would limit this industrial park to reach noise levels that would affect health, someone's health?

You see what I'm saying? What I'm

trying to say is that is there a correlation between the direct impact of an empty industrial park right now versus your testing levels and your same sound level tests if it was 100 percent full. Would you come to any different conclusion?

MR. GREENE: Mr. Freitas, I would be purely speculating as to what future noise levels would be there because I don't know what uses would go in. And as part of that concern, we have a large property, a large parcel. Parts of it are closer to a point on the ground than other parts.

So it could likely be, depending on where the receptor was chosen, that that receptor would experience no difference in noise levels from what they would experience under our predictions here. Or they could experience a different noise level based on a particular project that would be approved that was, you know, closer to them.

MR. FREITAS: Right.

MR. GREENE: And that would be up to the agency, you know, granting the approval. So I couldn't just say, give you a number. It just depends on what would be approved; how close it would be to the particular sensitive location.

MR. FREITAS: Let's use your chart.

MR. GREENE: Okay. All right, so we're looking at --

MR. FREITAS: Let's just take position 2 and position 5, just for the sake of argument.

MR. GREENE: Okay, we have 2 down at the lower portion sort of in the 7:00 --

HEARING OFFICER WILLIAMS: Could you identify that chart, please, Mr. Greene?

MR. GREENE: Yes, this is, I believe, from the AFC figure 8.5-2.

HEARING OFFICER WILLIAMS: Okay.

MR. TRASK: It's also in their prefiled testimony.

MR. GREENE: It's also in our prefiled testimony.

HEARING OFFICER WILLIAMS: Okay.

MR. GREENE: Do you need a copy of it, Major?

HEARING OFFICER WILLIAMS: No, no.

MR. GREENE: Okay, so we're looking at location 2, which is in approximately the 7:00 or so position, is that the location you're talking about?

MR. FREITAS: Yes, sir.

MR. GREENE: Could you help me out a little? Where would you be saying that new industrial would be approved, just to --

MR. FREITAS: The existing park, say just make a square right there, all the way --

MR. GREENE: Okay, so along Springfield and Colusa there?

MR. FREITAS: Right, yes.

MR. GREENE: Sort of that north --

MR. FREITAS: Yes.

MR. GREENE: -- east quadrant?

MR. FREITAS: Yes, and everything west of the track. Everything south of Manning with the western border being Colusa and the southern edge being Springfield.

And then, of course, the eastern edge would be the railroad tracks.

Rob, it's just a hypothetical, too, and I just really don't --

MR. GREENE: Yeah, this is a reserve, right. What' we're talking about, what Jim McLucas is pointing out is in the land use restrictions and such, that area that we were just talking about is not available for development; it's a preserve. It would have to be in -- yeah,

this is ag down below.

So this is the future site here, north of Springfield. So, directly west.

So, if another development were to occur directly west of the project site, then your question is what would be the effect at location 2. And, again, my answer would be it would be totally dependent upon what specific use went into that location.

It could be such that you wouldn't even have a perceptible increase or change in noise level. Some new facility could go in and you wouldn't perceive that there's any difference.

If some new facility went in that was substantially louder for some reason than the energy facility, then you would hear it and it would be louder.

So, again, I can't tell you, you know, what the result would be of developing that particular parcel. It would be totally dependent on what went in there.

MR. FREITAS: Well, let's be more specific, then, narrow it down for you. And let's say that 100 percent, the balance of the 60 percent of the park is filled with businesses and

manufacturing facilities that generate the same decibel levels as the plant.

MR. GREENE: That's a fairly straightforward calculation. We'd have to figure out how much, you know, how many more of these facilities could go there.

MR. FREITAS: Let's don't go to --

MR. GREENE: Let me --

MR. FREITAS: Let's don't get a scientific -- I don't need a scientific number for an answer. What I need is I'm more looking for a scientific response to an impact.

Would there be a substantial impact to -- would those numbers change substantially?

MR. GREENE: If another plant, let's say hypothetically another identical plant went in that was located the same distance from your receptor number 2. So at least we've tied down the distance.

MR. FREITAS: Right.

MR. GREENE: We have an identical plant.

MR. FREITAS: Right.

MR. GREENE: The increase in noise level experienced at location 2 would be three decibels. Now, according to the staff's exhibit in the FSA a

change of 3 decibels is just perceptible.

So you would, you know, just hear a difference. Does that -- I mean, does that answer your --

MR. FREITAS: Yeah, it's close enough. I'm just looking to try to correlate your response to the fact that the project site, or that the power plant, itself, could create a limiting factor that would disallow certain use. Do you follow me? Because of the --

MR. GREENE: I understand what you're --

MR. FREITAS: -- because of the noise levels that it creates. We have an impact area; it's an industrial park zone. And we have an ordinance that allows so much use in that zone with so much square feet available for that use.

If we stick a single use business there or manufacturing, or in this case a power plant, do the decibel levels of that power plant affect what can be brought into the balance of the park, the industrial park? Do you follow me?

MR. GREENE: I see what you're saying, yeah. Well, under the scenario that I described, the same distance away from your receptor location, identical plant, same noise output, you

know, and so on, the level would go up by three, and you would barely perceive that change.

MR. FREITAS: The reason this has relevance to me, Rob, and Committee, and staff, and Mr. Geesman, with all due respect is I'm a stakeholder in this. I own property next to this project. It's industrial property, zoned, the same zoning. I don't really want to see myself burdened with a restriction because another company gets chosen to profitize over my profitizing. So that's why I have a concern. That's my motivation for asking the question.

ASSOCIATE MEMBER GEESMAN: Okay, well, that's clear. Now, the question is do you have any other questions? I'm looking at my watch --

MR. FREITAS: Yes.

ASSOCIATE MEMBER GEESMAN: -- and we're racing with the clock.

MR. FREITAS: Okay. Mr. Geesman, are you going to restrict -- do you want to restrict my ability --

ASSOCIATE MEMBER GEESMAN: Certainly not.

MR. FREITAS: -- to --

ASSOCIATE MEMBER GEESMAN: I'm simply

admonishing you and all other parties, come to these hearings well organized; focus your testimony and your cross on issues where the parties are in disagreement. We will read the exhibits; we will read the briefs. Don't use the hearings to rehearse arguments that you want to make in front of the full Commission.

MR. FREITAS: Okay. That was my first question I asked, Mr. Geesman. I've had an opportunity to ask one question.

ASSOCIATE MEMBER GEESMAN: And it took about 15 minutes.

MR. FREITAS: Well, it took Mr. Kramer two hours.

ASSOCIATE MEMBER GEESMAN: I don't want to get drawn into a discussion, Mr. Freitas.

MR. FREITAS: Okay. Are you going to allow me to continue my questioning?

ASSOCIATE MEMBER GEESMAN: Continue.

MR. FREITAS: Rob, have you done any research, or do you have -- or studies, or do you have any knowledge of any research dealing with power plant worker comp claims associated with noise impacts or levels from power plants?

MR. GREENE: No, I do not.

MR. FREITAS: Are any studies being done or have any studies, as to your awareness, been conducted that have compared the irritation factor of unexpected sudden noise intrusions versus a continued and prolonged decibel level such as we're dealing with here?

MR. GREENE: Yes, I'm aware of those type of studies.

MR. FREITAS: Could you just elaborate, just highlight just a little bit of the difference between the two, impact-wise? Irritation-level-wise?

MR. GREENE: In general, the --

MR. FREITAS: Be brief, please.

MR. GREENE: In general, the continuous more or less, you know, benign noise levels from a continuous source are less annoying than would be sounds that are quite loud or come at unexpected intervals, intermittent sounds or repulsive sounds.

So, in general, steady, continuous noise is less annoying, less intrusive than would be other sounds that are short, intermittent and impacting.

MR. FREITAS: Thank you. I think

earlier testimony we probably scraped across the reality that a train track is adjacent to the site?

MR. GREENE: Um-hum.

MR. FREITAS: And it probably would make for quite a decibel concert if that train was to pull up there, stop, blow its horn while the plant was operating full blast.

MR. GREENE: Is that a question or --

MR. FREITAS: Is that --

MR. GREENE: -- a statement?

MR. FREITAS: There isn't any chance that the train's warning horn could not be heard over the noise of the power plant?

MR. GREENE: No, there's no chance of that, in my opinion, no.

MR. FREITAS: Okay. Do you have any studies or any information, or are you aware of any filings or complaints that have been filed regarding noise in the past ten years to the power plants that you have done research on?

MR. GREENE: The only two plants that I can address that question, would be the plant we've already discussed that was the subject of the two papers that were introduced. And the

other plant, the Los Medanos Plant, that I brought up in testimony earlier.

MR. FREITAS: Were those based on independent single filings, or multiple filings? The complaints.

MR. GREENE: I don't have that information.

MR. FREITAS: Or do you know.

MR. GREENE: No, I don't know.

MR. FREITAS: Do you know the name of that, or the address of that Los Melones or what town or city it's located in, the Los --

MR. GREENE: Los Medanos?

MR. FREITAS: -- Medanos.

MR. GREENE: I know it's in Pittsburg, California. I would defer to one of the other members of our panel. I'm sure we could get that address for you.

MR. FREITAS: That's fine. Do you know if, are studies being done that noise affects different people differently? Let me give you an example. You guys were making a lot of inferences to how impacts, different types of impacts in noise and psychological or whatever impacts, and this may be a real simplistic analogy, but we have

a piece of property up in the hills next to a 115 kW (sic) line. I can put five people up there on the same day within the same five-minute period and we can all step off and mark off numbers, and walk a distance away from that line to where the point would be that we can't hear the buzzing and hissing any longer.

Would that be a real simplistic way to compare, do a comparison of how noises affect, noise levels affected by different people?

MR. GREENE: Not really. What you're measuring there is the hearing acuity, how well people hear. And you're just saying, I hear it till I walk away, then I don't hear it.

That test would not provide you any information about whether or not they liked it, didn't like it, found it objectionable, didn't care. It would strictly tell you how well their hearing functioned.

MR. FREITAS: Over the years you've done a lot of research with noise and the impact and effect of noise on humans and their relationship to it. Would you say that people, in general, are probably more or less capable of acclimating to the noise, to certain noise levels?

MR. GREENE: To relatively low noise levels, and by relatively I mean non-jarring intrusive levels, they do acclimate. They habituate is the technical term. And, yes, that does happen.

And that's in the literature. In fact, I believe it's in my written testimony under some of the sleep disturbance areas where the studies have shown people are able to acclimatize themselves to external noise.

MR. FREITAS: You've given testimony today and in your opinion how much of your conclusions that you've drawn today are based on your own personal opinion versus just pure factual scientific data, if you were to give it a rating of percentage scale?

MR. GREENE: It's definitely a combination, but I'd say based on the documentation level presented in our testimony, I believe well over 85 percent or more, you know, is documented by strong evidence.

CEQA requires that an expert can give an opinion, but it has to be based in science and fact.

MR. FREITAS: Do the operators -- I'm

going to ask Mike -- switch to Mike Argentine, please. Mike, do the operators at the power plant, this particular power plant, do they use ear muffs or ear plugs?

MR. ARGENTINE: Yes.

MR. FREITAS: And reasons why?

MR. ARGENTINE: To protect them; to protect their hearing.

MR. FREITAS: Does that include the outside workers, or just the in-the-plant workers? Enclosed workers, in the enclosure.

MR. ARGENTINE: That would be when they're outside working in the plant. In other words, not in a building.

MR. FREITAS: Mike, I noticed you made a statement earlier that when you were asked why did you offer mitigation for noise mitigation to some of the people, and you said that you contacted a lot of the people.

Just for the record so we have it straight, I know you never contacted me one time. And I'm like next door. Is there a reason why? Or did you have a reason why you didn't contact me?

HEARING OFFICER WILLIAMS: Mr. Freitas,

can you identify on this map where your property is located? Just for foundation purposes.

MR. FREITAS: Sure. Yeah, sure, it's right --

ASSOCIATE MEMBER GEESMAN: Cross-streets will help, probably.

MR. FREITAS: Manning, Manning and Colorado, on the corner. Manning and Colorado, which would be the northern corner property of the project site.

It's actually the only contiguous property to the project site that's owned by a private party.

HEARING OFFICER WILLIAMS: If I may ask, how large is your parcel?

MR. FREITAS: Three acres, just under three acres.

HEARING OFFICER WILLIAMS: Thank you.

MR. ARGENTINE: Is there a residence there?

MR. FREITAS: No.

MR. ARGENTINE: That's why I didn't contact you.

MR. FREITAS: Mr. Argentine, is it your experience -- how many years you been doing this

power plant?

MR. ARGENTINE: More than 20.

MR. FREITAS: More than 20. Is it your experience that with -- you were asked about impacts of your power plant, overall regarding the noise issue with your power plant, is it safe to say that your experience, what you've seen, the overall impacts to the adjacent property owners for those properties, considering those properties that you doing acquire before you build the plant, are impacted financially, either positive or negatively?

MR. ARGENTINE: I don't know the answer to that.

MR. FREITAS: Back to Mr. Greene.

MR. GREENE: Yes, sir.

MR. FREITAS: You made a comment about the Sharper Image comparison; you compared noise levels to a device that you could purchase at Sharper Image. Could you just be a little more specific as to which device that would be?

MR. GREENE: I'm trying to think of the trade name. Anyone here, correct me if I'm wrong, I think SoundShaper is one. It's --

MR. FREITAS: I think I'd like you to

recall your own memory.

MR. GREENE: Well, the trade, I believe it's called a SoundShaper, but I don't recall their trade name for it. But essentially it's an electronic device that has a battery and a sound generator and a loudspeaker. And then various settings that you can modify.

But one of the typical ones is just kind of a shush-shush sound that is generated as a soothing, masking --

MR. FREITAS: Are you saying --

MR. GREENE: -- sort of noise.

MR. FREITAS: -- like a beach, the sound of the waves crashing on a beach, for example?

MR. GREENE: Some of the more expensive ones have the switch you can push to get beach, crashing of waves.

MR. FREITAS: For natural sounds?

MR. GREENE: Right.

MR. FREITAS: Okay, I just wanted to be clear on that, what it was.

MR. GREENE: Yeah, some are water, you know, waterfalls --

MR. FREITAS: Water -- a water sound.

MR. GREENE: -- or waterfall type noise.

MR. FREITAS: But you're saying this is a machine that emits sound not actually physically has water falling off of it so that you hear the water dripping?

MR. GREENE: No. This is electronic.

MR. FREITAS: Okay.

MR. GREENE: This has got batteries and a loudspeaker in it.

MR. FREITAS: You were asked by Commissioner Geesman a question, and I know that you gave a lot of explanation around it, but I'm not sure that I got the actual answer from his question.

And you used that -- I believe the Commissioner asked you about comparing the noise of the plant to the above sound that we're getting out of the ventilation system.

MR. GREENE: Um-hum.

MR. FREITAS: And I don't think you gave a specific concrete -- at least I didn't get a specific concrete answer. Could you try it again one more time, just for the -- to indulge me?

MR. GREENE: I said I was unable to give you a characterization without measuring it.

MR. FREITAS: So you couldn't

characterize it just in a normal, just using your normal comparison?

MR. GREENE: It's louder where I'm sitting, which is a little bit different from you, because you got another vent over your head. I've got one here. I believe it's louder than what the plant noise will be outside at the nearest residence, but --

MR. FREITAS: Yeah, let's be fair. Let's pick a spot on your -- let's pick a position spot so that it's fair to you. Just pick a position.

MR. GREENE: Do we want to take position 2, again, or --

MR. FREITAS: Yeah, something that would be comparable.

MR. GREENE: Well, I don't know, you know, comparable. I said I believe it's louder than any of the houses, that's just my opinion here without doing any more measurements. I mean I can't --

MR. FREITAS: Then you're including the house that's just like within a half a mile of the site?

MR. GREENE: Well, I don't want to go --

I mean, well, a half, you know, 2500, yeah, a half-mile is further out.

It's my opinion that none of the houses shown on this chart, figure 8.5-2, would experience a sound level of what I'm hearing from that air diffuser to my location.

In other words, that is louder, in my opinion, at this point, my speculation that that's louder than what we would be experiencing. But I can't give you a 100 percent answer there because I haven't measured it and don't know.

MR. FREITAS: Okay, that's fair. That's fair. One last question. You made a statement it's not the noise that's changing, it's the way we look at it.

MR. GREENE: Yes, I recall that.

MR. FREITAS: Can you see -- it's going to be a stupid question, and I'm going to --

MR. GREENE: No, there's --

MR. FREITAS: -- grant everybody the right to laugh at me if I --

MR. GREENE: There's no such thing as a stupid question.

MR. FREITAS: That's okay. Can you see the noise impacts, or can you hear electromagnetic

field?

MR. GREENE: You cannot hear -- actually you should split it out into magnetic fields and electrical fields. But, in general, a magnetic field has no audible effect.

Now, if you are activating an electromagnetic and you hear a hum or a buzz, then that's due to magnetostriction, which are the windings compressing and releasing and making the device vibrate, which vibrates the air and that's what gets to your ear.

But EMF, itself, does not have an audible component. Electric fields, again, of themselves, generally do not have an audible component, but you described one earlier, and that's you were near the 115 kV line, and you were hearing a corona discharge from that line, and some hash or sizzle -- there's different words for it. And that would be, again, a manifestation of the air in proximity to the bundle ionizing. You get disturbances that are in the air. That goes to your ear and you hear that disturbance. But you don't directly hear EMF, per se.

MR. FREITAS: Thank you very much. And thank you very much, Commissioner, for indulging

me.

ASSOCIATE MEMBER GEESMAN: Certainly, Mr. Freitas.

HEARING OFFICER WILLIAMS: Okay, do you have redirect?

MR. WHEATLAND: I think so, but could I have just a three-minute recess?

HEARING OFFICER WILLIAMS: Yes. We'll take three minutes, just three minutes.

(Brief recess.)

HEARING OFFICER WILLIAMS: We're back on the record.

MR. WHEATLAND: Thank you. That three minutes was well spent. We have just one question on redirect.

REDIRECT EXAMINATION

BY MR. WHEATLAND:

Q Mr. Argentine, there were several questions asked earlier regarding Mr. Greene's recommendation in his paper for pre-project community attitudinal surveys. That is surveys that would be conducted before the project is constructed.

Would you please briefly summarize the efforts that the applicant has made to contact the

community regarding noise impacts prior to construction of the facility?

MR. ARGENTINE: Yes. If you look at figure 8.5-2 of the AFC, which is the noise contour map. I met with all of those property owners inside the 40 decibel contour. There's a total of eight residences identified.

And when I met with them I described the Energy Commission process, and also the proposed power plant that we'd like to build. And then made an offer of a noise reduction package to each of the property owners.

The noise reduction package that was offered included exterior insulation to reduce noise; dual pane windows; solid core doors; and air conditioning, if they didn't have it.

MR. WHEATLAND: And just to be clear, that offer was to provide those measures to their residence if the plant was constructed, and that would be provided to them without any cost to them, is that correct?

MR. ARGENTINE: That's correct.

MR. WHEATLAND: And that offer was made without any condition that they support or oppose the plant? There was no condition with respect to

their position on the facility, is that correct?

MR. ARGENTINE: That's correct.

MR. WHEATLAND: All right. And what was the response that you received?

MR. ARGENTINE: Well, I received an overwhelming response, a positive response to the proposals. Seven of eight landowners actually wrote letters back approving the proposals. One landowner never did write back, but they essentially agreed with the proposal. But we did not get a letter from those folks.

MR. WHEATLAND: Thank you. That completes my redirect.

HEARING OFFICER WILLIAMS: Recross?

MR. KRAMER: No.

HEARING OFFICER WILLIAMS: Mr. Freitas?

MR. FREITAS: Yes.

RECROSS-EXAMINATION

BY MR. FREITAS:

Q Regarding those, what you just stated for the record, did you meet with any oppositions at all prior to your meeting with those eight people?

MR. ARGENTINE: As far as I know there was no opposition.

MR. FREITAS: Prior to meeting with those eight people from any residents in the City of San Joaquin?

MR. ARGENTINE: Prior to, correct.

MR. FREITAS: Thank you.

HEARING OFFICER WILLIAMS: Okay, thank you. Staff.

MR. KRAMER: We need to have our witnesses sworn.

HEARING OFFICER WILLIAMS: Okay, madam court reporter, if you could swear the witnesses, please.

Whereupon,

STEVE BAKER, JIM BUNTIN and BILL THIESSEN were called as witnesses herein, and after first having been duly sworn, were examined and testified as follows:

DIRECT EXAMINATION

BY MR. KRAMER:

Q Okay, starting with Mr. Thiessen, please state your full name and then spell your last name for the record.

MR. THIESSEN: Yes. I'm Bill Thiessen, T-h-i-e-s-s-e-n.

MR. KRAMER: Next.

MR. BUNTIN: My name is Jim Buntin, B-u-n-t-i-n.

MR. BAKER: Steve Baker.

MR. KRAMER: Okay, then again from Mr. Thiessen to Mr. Baker, please briefly summarize your qualifications -- unless there's a stipulation these gentlemen are expert witnesses and --

MR. WHEATLAND: We would stipulate that they are qualified to testify in this proceeding as expert witnesses.

HEARING OFFICER WILLIAMS: Mr. Freitas, do you accept that?

MR. FREITAS: Yes, I stipulate -- yes, I do.

HEARING OFFICER WILLIAMS: Okay.

MR. KRAMER: Did each of you participate in the preparation of the staff assessment and the addendum to the staff assessment in this case?

MR. THIESSEN: Yes.

MR. BUNTIN: Yes.

MR. BAKER: Yes.

MR. KRAMER: And did you also participate in the preparation of the responses to the applicant's proposed changes to the

conditions, which is exhibit 2O that was filed on February 11th?

MR. THIESSEN: Yes.

MR. BUNTIN: Yes.

MR. BAKER: Yes.

MR. KRAMER: Do those documents represent the results of your review and your opinions regarding the noise aspects of this project?

MR. THIESSEN: Yes.

MR. BUNTIN: Yes.

MR. BAKER: Yes.

MR. KRAMER: Mr. Buntin, I would ask you to address first the question of the appropriate measure of noise, be it L90 or LDN or LEQ or some other measure, and explain the measure that the staff chose in making its assessment. And if it's different from the applicant's standard, why you believe it's the appropriate standard.

MR. BUNTIN: Thank you. If it's all right I'd like to go over to that board just to do an illustration. Would that be appropriate?

HEARING OFFICER WILLIAMS: Go right ahead.

MR. KRAMER: Well, I think we'd like to

preserve this for the record, so if we could use the overhead then we could Xerox the acetate later.

MR. BUNTIN: Okay.

(Pause.)

MR. BUNTIN: Thank you. Let's do a line real quick for focus. Okay. I'll adjust it when I draw something. Let's go ahead with this.

As you know, one of the basic questions we're facing here is that the issue under CEQA of whether there's a significant noise impact due to the project.

Staff has wrestled with this issue for many months; had discussions with the legal staff as well as between ourselves, trying to come up with a consistent logical method of appraising the potential impact of the project in terms of the change in noise levels.

And there we're leaning on appendix G of the CEQA guidelines where you heard the discussion earlier. The statement is that a significant effect from noise may exist if a project would result in a substantial permanent increase in ambient noise levels.

We have decided over time, and actually

we're building on some history here with the Energy Commission I'll have Steve talk about later, that in the case of a quiet rural area that the L90 descriptor gives us our best measure, our best starting point, if you will, for assessing the potential impact of the project. And I'll explain why in a second.

We have further said that we think it's reasonable that if there's a 5 decibel change in the ambient noise level using this L90 descriptor that there's a potential for a significant impact. And we have to look more closely.

Furthermore, our general policy has been that if the noise level increases ten decibels we think that's clearly significant.

Now let me talk just for a second. The reason that we're concerned about this is that we actually concur with some of the statements that were made in Mr. Greene's reports, where communities with very little ambient noise levels may have expectations acoustically, and tolerances acoustically that are different from a more normal, let's say, suburban environment.

We have read also in Mr. Greene's reports that people will express their displeasure

when the ambient noise levels change by even three to five decibels when it's very quiet in that environment.

We think that from a CEQA standpoint that a change in a low noise level environment is important, in fact. And in the document that we, one of the exhibits we provided here which is from the Journal of Sound and Vibration, you'll find that that particular person and others apparently agree with that concept, that there is a differential. People in quite noise environments expect more. They expect less noise; they expect less of an intrusion. And, as a result, as you see, people have applied correction factors or adjustment factors to account for that. So -- and those have been in the range of five or ten decibels.

And let me just say, too, that the reason for using a ten decibel screen, it's commonly used. One reason is that that, for similar noise sources, is subjectively as though you doubled the noise level, a ten decibel change.

And in addition, again that the noise sources are similar in frequency content. When you have one new noise source that's ten decibels

louder than another, it tends to mask the quieter one so you can barely hear it anymore. And that's the kind of issue we're interested in here.

Now, let me make a little illustration and it's just going to be an illustration generalized for a quiet noise environment. I'm going to base it on some information that we've seen over the years we have done noise measurements at many different places and many different situations. And I'm going to try to represent what ambient noise means, and how the L90 and the LEQ relate to one another.

Okay, so I'm going to do a very simple graph that has noise level on this vertical axis, and we'll put it in decibels. And just for the sake of argument I'll put some numbers on here. And then down here on the horizontal axis we'll just do time.

Okay, if now what we do is we plot on here the noise level observed over time and get some idea of what goes on in the quiet noise environment during the quietest hours of the night. And those are the hours that we, the staff, have traditionally looked at. Or it could be the quietest hours of the day. But basically

the quietest time. What do people expect in these quiet hours is one of our tests of the potential significance.

So let me do some examples here.

HEARING OFFICER WILLIAMS: Mr. Buntin, you can refer to that chart as 2U, exhibit 2U. And it'll be reduced to -- you can reduce it to a copy after the proceedings and submit it.

MR. BUNTIN: Very good.

Okay, in a quiet environment we might expect to see that quite a bit of the time it is indeed fairly quiet. Then a car may come by, or it may be a train that gets very loud with the locomotive horn and then it gets quieter as the cars go by; and then it gets quiet again. Comes back up as traffic perhaps in the distance, increases; maybe another car comes by, something like that.

Now, this whole package, this whole representation of noise levels which includes kind of a bottom here at this area, and a top here, is the ambient noise level. Okay, so that's the whole thing.

And it's very common to say in the ambient noise level we're concerned about certain

statistical parameters. And the L90 represents about the quietest that it gets, 90 percent of the time it's louder than that. So if we drew an L90 for this sample it would probably be about there.

And what you can see is only 10 percent of the time it's quieter than that; 90 percent of the time it's louder than that. It's kind of a baseline. When everything else goes away that what you hear. It's also called the residual noise level by some people and background noise level by others.

Now where does the LEQ fit into this equation? Well, the LEQ is strongly influenced. It's an energy average. In other words you add up the energy represented by these decibels. A ten decibel change is ten times the energy; a 20 decibel change is a hundred times the energy.

So when you get a range like this where you've gone from say 35 to maybe 65 decibels, you have a 30 decibel change, that's a thousand times the energy up here that you had down here.

So when you have a few events in a time period, the LEQ jumps up rather dramatically. And in a really quiet situation where you don't have many of these cars, the LEQ, the L90, the L50 will

all be down in here, something like that.

But if you have these cars or trains or whatever comes by, you will start to get an elevated LEQ value, somewhere up in here.

So there can be quite a difference between those two. One thing you have to keep in mind is that we like to look at the four quietest hours of the day or night. And if you actually do that comparison, as Bill did in the staff assessment, you'll see there's not a tremendous difference between LEQ and L90. There is a difference, but those are different numbers than are in the testimony that we talked about here before.

MR. KRAMER: Let me just stop you, for the record can you put a label on the middle line? It's an important decibel. I believe you said that was the LEQ when there were relatively few events?

MR. BUNTIN: Right, this line here?

MR. KRAMER: Right. I just want to make sure that somebody can correlate the transcript.

MR. BUNTIN: Sure. The other thing you should take away from this graph is there is a maximum noise level, there's a minimum noise

level. We could average these out arithmetically and commonly one looks at the median noise level. Half the time it's louder than that; half the time it's quieter. And that would also be down here in this range here, in the middle.

I guess the point I want to make here is that we are not oblivious to all these factors and these names. We have, in fact, recognized that all these things are going on. We made a very measured reaction to what we see as being the potential for the public reaction to the sound.

And we're looking at something aside from the overt adverse effect such as sleep disturbance, activity interference or physiological response. We're looking at the issue of the quality of life in this case. We're looking at the issue of what people expect out of a quiet environment.

Because in CEQA, you know, we're trying to make a determination is this substantial or not. That's really what our issue is.

I'd like to do -- actually I'd like to do one other quick graph here, if I may. What number should I put on this one, 2V?

HEARING OFFICER WILLIAMS: V.

MR. BUNTIN: Okay. I just want you to see the difference between what we're proposing and what the applicant is proposing. And I'm going to run this graph down one more notch to 25.

We have, in the analysis of the data, looking at the four quietest hours, you'll see numbers for site G1, for example, that the L90 values were 28 to 29 db. Okay, 28 to 29.

We have said that once you increase that by ten decibels we believe that's a substantial effect. The LORS that we believe are important, the Fresno County standard for noise sources in Fresno County that affect people in Fresno County is 45. And the applicant is proposing 49.

There is a lot of difference in these numbers. And to go back to my previous exhibit, to 2U, in this example if we just apply a standard of 39 decibels you can see we can no longer hear -- I won't even say that -- we no longer, we have interference with hearing all these things down here, the L90, all these intermediate levels. But we aren't completely obscuring all of them.

Now if we go to the applicant's proposal way up here, all that's left is the loudest events.

So, when the power plant is operating the noise level from that power plant basically replaces all of that with a new noise level up here.

And we think that that increase is, as it's described in the range of 16 to 17 decibels and more, actually 49 to 29, we think if it's a 20-decibel change, that's a lot. That's substantial, we believe, in anybody's book.

I'd like to have, if I could, have Steve Baker talk briefly about the history of the L90 descriptor with the Energy Commission.

MR. BAKER: Okay, I can't say when the Commission Staff first started using L90 as a base because in the 11 years that I've been doing noise here the use of L90 preceded my term as a noise staffer here. I inherited it from my predecessors.

MR. KRAMER: You need to speak up because that's only for the court reporter.

MR. BAKER: Yeah, okay.

HEARING OFFICER WILLIAMS: Mr. Baker, it might be better if you could stand up. I don't know if that's something -- and in the middle might be helpful, so Mr. --

MR. FREITAS: That's okay.

HEARING OFFICER WILLIAMS: He's okay? Okay.

MR. BAKER: The reason behind using the L90 is this, okay. The noise environment, the ambient noise environment that Mr. Buntin described is composed of various relatively short-term noise events. You'll hear wind blowing through the grass; you'll hear animals, you know, barking and such; you'll hear cars driving by, airplanes flying over, trains. You'll hear people closing doors; people talking, laughing; kids playing. But these are all events that occur momentarily, and their sum is what creates the curves that Mr. Buntin just illustrated.

The noise from a power plant, as we've said and as you've just heard a few minutes ago, heard Mr. Greene testify, the noise from a power plant is relatively steady. It's very steady state. Mr. Greene, himself, has said that the noise from a power plant typically varies 1 to 1.5 decibels. Well, I believe he's right.

It's also commonly taken in the noise industry that any change in noise level less than three decibels is not typically audible to the

human ear. So, it's pretty clear from that that power plant noise is steady. It's not the momentary varying noises that go to make up the normal ambient noise regime.

When you bring a power plant into a neighborhood and turn it on you have changed the noise regime there. If the power plant is noisy enough that it's noise level exceeds the lowest levels, the ones Mr. Buntin showed on his illustration, the L90 and even the L50, the power plant replaces those. The power plant noise now becomes the lowest level; it becomes the background; it becomes, except for a few high energy incidents like cars or trains, it becomes the noise of the ambient noise environment.

If that change, if the difference between no power plant and power plant is not very great, if it's only a few decibels then it's probably not a significant impact.

But in this particular project Calpine is proposing to build a power plant in the quietest location that I've seen in the 12 years that I've dealt with noise. Any power plant here is going to be noisy compared to the environment. It's deathly quiet out there. In the nighttime

when people are trying to sleep, it's hold-your-breath quiet. Putting anything there is going to create an impact.

The project they've proposed, particularly with their suggested revised condition noise-6, would be so noisy that it would supplant the existing noise environment by up to 20 decibels. Four times the noise. And we believe that is a significant noise impact.

HEARING OFFICER WILLIAMS: Thank you, we appreciate that, for standing.

MR. KRAMER: Let me ask a follow-up question of Mr. Baker then. Have you reviewed the letters that the applicant has entered into evidence from the nearby property owners?

MR. BAKER: Yes, I have.

MR. KRAMER: Should I identify those?

HEARING OFFICER WILLIAMS: That might be helpful.

MR. KRAMER: Okay, those are -- you may have copies; I don't know if we have copies of all of them.

Did you find each of those letters to be identical as far as the text of the letter?

MR. BAKER: The only difference I could

find was the signature block on each letter.

MR. KRAMER: So the identity of the author was different?

MR. BAKER: Yes.

MR. KRAMER: Okay, those letters, I believe, are -- let the applicant correct me if I'm wrong, but exhibits 4B.2 through 4B.8.

And you have before you a letter from Floyd and Lillian Bastiani.

MR. BAKER: Yes.

MR. KRAMER: That one is exhibit 4B.3. Are you satisfied with the expressions of satisfaction that are contained in these letters?

MR. BAKER: I have to question them.

MR. KRAMER: And why is that?

MR. BAKER: The people that signed this letter apparently have agreed to Calpine's proposed mitigation based on Calpine's representation of the power plant and the noise that it will create when it's operating.

I fear that that information, that that representation is false and misleading; that Calpine has understated the amount of noise that these people will hear from the power plant.

MR. WHEATLAND: I'm going to interpose

an objection at this point. This was a letter dated November 24, 2002 to Mr. Matt Trask -- I'm sorry, November 4, 2002. It preceded the issuance of the staff addendum, the supplemental testimony, which was dated December 24, 2002. It should have been included in this supplemental testimony. This is additional direct testimony on a new issue for which the staff has not offered a compelling reason to be excused from the requirement of filing their testimony in a timely manner.

HEARING OFFICER WILLIAMS: Okay, so your objection is that --

MR. WHEATLAND: The testimony is untimely. They had adequate notice of this exhibit. It was addressed directly to Mr. Trask by the homeowner. And if they had concerns about it, they should have addressed their concerns in their supplemental testimony which was prepared on December 24, 2002.

HEARING OFFICER WILLIAMS: Were these --

MR. KRAMER: Well, --

HEARING OFFICER WILLIAMS: Just let me be clear. When were these --

MR. WHEATLAND: I'm just objecting to the additional -- I don't object to it being an

exhibit. I'm objecting to the staff's critique of this exhibit in an untimely manner.

This document they've had since November 4th. And I believe if they were dissatisfied with it, they've had ample opportunity to contact the homeowner, to contact the applicant, or to express their dissatisfaction in their supplemental testimony. They should --

MR. KRAMER: Well, in fact, in the addendum at page 2-24, staff did mention the receipt of these letters and expressed concerns. Apparently that's been overlooked.

MR. WHEATLAND: What section are you referring to?

MR. KRAMER: I'm referring to the noise section of the staff assessment addendum at page 2-24. It was filed on December 24th of 2002.

MR. WHEATLAND: I see concerns about whether residences are suitable for sound insulation, not whether these letters were sent and signed in good faith.

HEARING OFFICER WILLIAMS: Okay. The objection is overruled.

MR. BAKER: I prepared, and Mr. --

MR. KRAMER: Were you done explaining

your objections to the letters?

MR. BAKER: If you look at the letter, the second paragraph following the bullets, let me quote it. Quote: We understand that the SJVEC will be built using extensive noise reduction technology." Unquote.

Okay. I don't believe that the proposed project uses any extensive noise reduction technology. For instance, the --

MR. KRAMER: Okay, we need to identify the exhibits you're looking at.

MR. BAKER: All right. I've prepared a table where I've summarized the applicant's proposed noise mitigation measures for siting cases that are currently before the Commission. I haven't gone any farther back to ones that have already been permitted. These are just projects that are currently alive.

MR. KRAMER: This is exhibit 2L, is that correct?

MR. BAKER: Yes.

MR. KRAMER: Okay, no, it's 2N.

MR. BAKER: N, as in November.

HEARING OFFICER WILLIAMS: I would also note that apparently during the editing phase we

mixed two of staff's exhibits in 2D beginning with the term accurate should have been a different exhibit. So, at the end of staff's presentation when all their documents are in we'll re-number that one last in order.

MR. BAKER: The information I've summarized in this exhibit 2N-ovember is simply the proposed mitigations that the applicant included in their original application for certification. These are not mitigations that staff proposed, or that intervenors proposed later on, or even ones that may eventually be enforced by the Commission. Rather these are just what were described in the application for certification.

The next-to-the-last entry, San Joaquin Valley Energy Center AFC, shows the mitigation measures that were described in the application for certification for this project. And then following that are the mitigation measures that were described in the applicant's February 4th testimony. You can see that they have added to that.

The measures described in the February 4th testimony are still nothing extraordinary.

It's common in a country like the United States where you have OSHA protecting workers to buy your gas turbines and your steam turbines with an acoustic enclosure. So, putting acoustic enclosures over the combustion and steam turbines is nothing extraordinary. If you don't do that, then the costs of protecting your workers' hearing become very high. So, it's common, you know, it's absolutely industry common to put these machines in the acoustic enclosures for no other reason than to protect your workers from noise impacts.

The specification of major equipment at 90 or 85 decibels at a distance of three feet, again that's commonly done in building power plants and other industrial facilities in this country because of the requirement to protect your workers from noise. OSHA and CalOSHA put penalties on you if you expose your workers for too long to levels of 85 or 90 decibels.

Okay, so again we're talking industry standard mitigation measures here.

Steam relief stack silencers. That's something that has been put on Commission-certified projects for a long time. During startup, during unexpected events like plant

trips, the plant will release steam. And if the steam stacks are not silenced, this is very noisy, very annoying. It's a fairly short-term noise, but it's the kind of thing that wakes people up in the middle of the night and sends them for their telephone. So putting stack silencers on is not unusual.

Inlet air silencers on the gas turbines. That's commonly done in power plants that are built anywhere near people. If you're building a plant out in the middle of nowhere then you probably don't need inlet air silencers. But this plant is going to be fairly near residences, near a city. And so inlet air silencers would be expected, not extraordinary.

Put the gas compressors inside a building. Gas compressors are very noisy machines. If you're near any one you're going to want to consider putting your gas compressors in a building.

The same with the air compressors.

So I'm saying that just on its face the proposed mitigation for this project is nothing extraordinary.

If you then look back at some of the

other projects that I've summarized here, and again these are just projects that are currently before the Commission. On the first page, the next-to-the-last one is the Inland Empire Energy Center. That's also a Calpine project. It's effectively two-thirds of this project, two gas turbines instead of three.

They've listed in their application considerably more mitigation. Okay, this project is near people. It's probably near more people than the San Joaquin Valley project, and therefore more mitigation has been proposed.

The point I've tried to make with this exhibit 2N-ovember is that the claim in this letter that the plant will be built using extensive noise reduction technology is not true.

Further down in that same paragraph in the letter, the person signing the letter said "the low residual noise level will be acceptable to us." So this sounds as though the San Joaquin Valley project will exhibit at a low level compared to other power plants.

If you look at the other table I've prepared --

MR. KRAMER: Let me pass that out.

That's 2M, as in Michael.

MR. FREITAS: Commissioner Geesman, would it be okay if I asked just if somebody could just pace it down, because I'm having a hard time following.

HEARING OFFICER WILLIAMS: Okay.

MR. FREITAS: I appreciate it. I'm not trying to delay --

ASSOCIATE MEMBER GEESMAN: No, I understand. We're going to stop tonight at 5:30 promptly. We're going to start again tomorrow at 1:00. We will go all night tomorrow if we need to.

MR. FREITAS: Okay.

ASSOCIATE MEMBER GEESMAN: But tonight we're going to stop at 5:30.

MR. WHEATLAND: Just for clarification, when was this chart provided?

MR. KRAMER: Last Friday with the revised exhibit list.

MR. WHEATLAND: I'm going to make the same objection to this document as I made to the staff's other testimony. Last Friday is, I think, an inappropriate time for the staff to supplement the FSA. It wasn't consistent with the

Committee's direction for the submission of testimony in this proceeding. And I believe that this additional exhibit is untimely.

HEARING OFFICER WILLIAMS: Okay, so notes.

MR. FREITAS: Which document did he -

HEARING OFFICER WILLIAMS: 2M.

MR. FREITAS: What number did you give this one?

MR. KRAMER: 2N, as in Nancy.

HEARING OFFICER WILLIAMS: 2N. They're premarked on the exhibit list, Mr. Freitas.

MR. FREITAS: I'm just trying to follow this; this hearing's going at a pretty quick pace here.

HEARING OFFICER WILLIAMS: It's probably best to try to follow on the exhibit list. Do you have a copy of it?

MR. FREITAS: Okay. I just wanted to know what number this one was.

HEARING OFFICER WILLIAMS: That one's 2N.

MR. FREITAS: Thank you.

MR. BAKER: In exhibit 2, Mike, I've gone through again, applications for

certification, and I've gathered projects which are, in some way or another, similar to the San Joaquin Valley project. Most of them on this list are combined cycle projects like the San Joaquin Valley project.

I've gone back as far as 1992 when I began handling noise. I've dealt with everyone of these projects, myself, in the capacity of either preparing or supervising the preparation of the noise testimony.

The fifth column shows the noise limit that was imposed on the project. This is how many decibels were -- the maximum number of decibels LEQ that were permitted from the project at the nearest sensitive receptor.

And the column following, the sixth column, is the noise measured at that distance, at a distance of the figure in column six.

MR. WHEATLAND: Sorry to interject, but I want to be sure I heard correctly. This is the noise limit dba is LEQ for each value that's reflected in this table?

MR. BAKER: Yes, that's how we measure the noise from a specific source. As opposed to ambient noise measurements, which may be measured

with any of several different metrics depending upon the use and the purpose

MR. FREITAS: Does that relate to the chart that we jus saw on the overhead?

MR. BAKER: No, sir, not really.

Okay, so for instance, the first entry, Crockett Cogeneration. The plant was restricted to 49 decibels measured at a distance of 400 feet.

If we go down further on the chart you come to the end on page 3, and the final entry is San Joaquin Valley project as proposed in the applicant's February 4th testimony would be allowed to exhibit a noise level of 49 decibels. And I'm not certain whether we're talking about L90 or LEQ here, but let's ignore that for the moment, just for argument sake.

The 49 decibels at a distance of 3600 feet, the distance to the nearest sensitive receptor. All of these numbers are just numbers, as you've heard testified earlier. You can't just look at decibel numbers and compare them directly.

So, what we've done in the final column is we converted all these decibel figures into numbers and in common distance. In this case 1000 feet. So as you look through the chart you see

some plants are allowed to be noisier than others.

The largest number in that column is the last one, the applicant's proposal after their February 4th testimony for the San Joaquin Valley project would be the equivalent of 60 decibels at 1000 feet.

There's one noisier one I see here, and another -- there are a few other noisier ones, but these are out in the middle of nowhere, where there's no one to hear the plant. High Desert, for instance. Moss Landing, you know, there are few, if any, residents nearby.

So the San Joaquin Valley project is relatively noisy compared to the projects the Commission has dealt with in the past 12 years.

If you look on the second page of this chart the East Altamont project, that's another Calpine project. It's effectively a sister to San Joaquin Valley. It's the same size, the same equipment and everything. It's only allowed to be 51 decibels at 1000 feet. That's nine decibels less than San Joaquin Valley. That's one-half the aberrant noise.

San Joaquin Valley, in comparison to other projects, can hardly be described as

yielding a low residual noise level.

That's the description of my --

HEARING OFFICER WILLIAMS: Mr. Baker, for the East Altamont project, the noise is measured at a distance of 4000 feet?

MR. BAKER: That's the nearest receptor and they're allowed to visit 39 decibels upon that receptor. When you convert that to 1000 feet, it becomes 51 decibels.

HEARING OFFICER WILLIAMS: I see. Okay, thank you.

MR. BAKER: That explains the question, the validity of these letters questioning whether the people who signed them really understood what kind of noise they'll be presented with when the power plant is up and running.

MR. KRAMER: Please turn to exhibit 2D, as in dog, which is an excerpt from the Magnolia Power project application for certification.

MR. BAKER: Several places in the applicant's February 4th --

MR. KRAMER: Let me stop you until it's distributed to the parties.

MR. FREITAS: Yeah, please. Thank you, Mr. Kramer.

(Pause.)

MR. FREITAS: Thank you, does this have an exhibit number, Mr. Kramer?

MR. KRAMER: 2D, as in dog.

MR. FREITAS: Thank you. Sorry I didn't follow it.

MR. KRAMER: No problem.

MR. FREITAS: I was writing at the time.

MR. KRAMER: Mr. Baker, does this staff assessment discuss -- sorry, the AFC section discuss the appropriate measure of background sound levels?

MR. BAKER: Yes, it does.

MR. KRAMER: And what does it say?

MR. BAKER: Looking at exhibit 2D-elta, it's the noise chapter from the application for certification --

MR. FREITAS: Which page, sir?

MR. BAKER: For the Magnolia Power project filed with the Energy Commission on May 14, 2001. The project is working its way through the process. I believe the proposed decision is out for a vote any time now.

If we look at the first page, 5.12-1, the bottom paragraph. I'll quote from it. Quote:

The residual environmental noise level is the quasi-static noise level that exists in the absence of all identifiable sporadic individual noise events, such as those caused by automobile pass-bys, aircraft overflights, intermittent dog barking, et cetera. In most environments this residual level is called the ambient or background noise level."

If we go to the next page, page 5.12-2, the second complete paragraph, the third-to-the-last sentence, quote: The measurable statistical sound level quantity, L90, and decibels A, also represents the background sound level." Unquote.

This appears to contradict very strongly and very directly applicant's February 4th testimony in which it has been said, for instance, on page 63, quote: The staff, seemingly oblivious to the distinction between ambient and background noise levels, uses the terms interchangeably in the staff assessment, and even combines these two terms, et cetera." Unquote.

I put faith in this Magnolia application. I believe what it says. It's correct. If you'll --

MR. KRAMER: And is that the approach

that you take in these?

MR. BAKER: It's the approach that we take, and that we have taken. The L90 background noise level is a very valid measure of ambient noise, it is the, we believe, most valid noise, ambient noise measure for use in evaluating power plant noise impacts. And I believe it's a credible document.

If you turn to the next page that I provided here, it's page 8-1, you find consultant participant contacts. These are the people who prepared this application for certification. And two-thirds of the way down that list you see that the noise section was prepared by Rob Greene.

Mr. Greene appears to have said one thing in the Magnolia AFC and something different in the February 4th testimony.

MR. KRAMER: Thank you. Can we go off the record for a second?

HEARING OFFICER WILLIAMS: Off the record.

(Off the record.)

MR. KRAMER: I just have a couple of questions for Mr. Thiessen and then I'll be finished.

HEARING OFFICER WILLIAMS: One second. Looking at the hour, we'll complete your direct. And at the completion of your direct we'll take up any housekeeping measures. We won't get into any cross-examination today, in consideration of the hour. Okay? So that's the plan. Is there -- Mr. Freitas, you have a problem with that?

MR. FREITAS: No. I was just going to say I have three questions if you wanted to just get it over with.

HEARING OFFICER WILLIAMS: No. No.

MR. FREITAS: Okay.

(Laughter.)

MR. WHEATLAND: At the conclusion of the direct examination can we take a few minutes and then plan out tomorrow?

HEARING OFFICER WILLIAMS: Yes, that would be good. That's what I plan to do. Okay, back on the record.

BY MR. KRAMER:

Q Okay, Mr. Thiessen, you've reviewed the applicant's testimony?

MR. THIESSEN: Yes.

MR. KRAMER: And with regard to the nighttime hours for the measurement of noise, has

staff measured that in the same way as the applicant?

MR. THIESSEN: No.

MR. KRAMER: Could you explain the differences and the rationale for staff's approach?

MR. THIESSEN: Staff has determined background noise levels based on the data prepared by the applicant. We based it on the four quietest hours, day or night, that occurred.

MR. KRAMER: And what did the applicant use?

MR. THIESSEN: The applicant averaged the hourly noise levels through a 24-hour period.

MR. KRAMER: But for their nighttime chart, which hours did they use?

MR. THIESSEN: They used the hours from 10:00 p.m. through 7:00 a.m.

MR. KRAMER: So that's nine hours, if I count correctly?

MR. THIESSEN: That's correct.

MR. KRAMER: And you used four?

MR. THIESSEN: That's correct.

MR. KRAMER: Why did you use four instead of nine?

MR. THIESSEN: We used four hours, we could use fewer than that, but we pick four contiguous hours that seems to represent the quietest period during a 24-hour cycle.

MR. KRAMER: And why is it important to look at the quietest period?

MR. THIESSEN: Well, this is the time period when the ambient noise levels are at their lowest, and where the potential for intrusion above those ambient noise levels is the greatest.

MR. KRAMER: Thank you. No further questions.

HEARING OFFICER WILLIAMS: Okay. Let's go off the record.

(Off the record.)

HEARING OFFICER WILLIAMS: We are about to adjourn for the evening. We will resume tomorrow in this room at 1:00 p.m., and pick up with visual resources. And after completing visual resources we'll return to the topic of noise, and begin with applicant's cross-examination of staff's witness.

Thank you. The meeting is adjourned.

(Whereupon, at 5:20 p.m., the hearing was adjourned, to reconvene at 1:00 p.m., Friday, February 21, 2003, at this same location.)

CERTIFICATE OF REPORTER

I, VALORIE PHILLIPS, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Hearing; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said hearing, nor in any way interested in outcome of said hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this 26th day of February, 2003.